Report of the 65th Meeting of the International Whaling Commission 2014

Portorož, Slovenia



INTERNATIONAL
WHALING COMMISSION

Covering the period
July 2012 -
October 2014

Report of the 65th Meeting of the International Whaling Commission and Associated Meetings and Workshops

THE INTERNATIONAL WHALING COMMISSION WAS CONSTITUTED UNDER THE INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING SIGNED AT WASHINGTON ON 2 DECEMBER 1946



INTERNATIONAL
WHALING COMMISSION

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Cambridge 2016

List of Members of the Commission

Contracting Government	*Adherence*	*Commissioner*	*Appointment*
Antigua and Barbuda	21/07/82	Ambassador D. Joseph	22/07/14
Argentina	18/05/60	Ambassador S. R. Cer utti	21/01/09
Australia	10/11/48	Ambassador Peter Woolcott	14/09/15
Austria	20/05/94	Dr. A. Nouak	09/08/96
Belgium	15/07/04	Ms S Langerock	16/06/15
Belize	17/06/03	Ms. B. Wade	17/05/06
Benin	26/04/02	Mr. J-B. Degbey	03/06/11
Brazil	04/01/74	Ambassador C.F. de Matos Arruda	04/09/14
Bulgaria	10/08/09	Ms. Y. Velina	08/01/16
Cambodia	01/06/06	Mr. H.E. N. Thuok	14/09/09
Cameroon	14/06/05	Dr. B. Emma	29/01/14
Chile	06/07/79	Mr. J. Fernandez	28/06/13
People's Republic of China	24/09/80	Mr. Li Jianhua	06/06/00
Colombia	22/03/11	Ms. A. Ramirez Martinez	11/05/15
Republic of the Congo	29/05/08	Mr. J.A. Kolelas-Ntoumi	21/07/08
Costa Rica	24/07/81	H.E. Mr. F. Mora	03/07/14
Côte d'Ivoire	08/07/04	Dr. Z.A. Meite	04/06/15
Republic of Croatia	10/01/07	Mr. N. Strizrep	16/05/14
Cyprus	26/02/07	Ms. M. Hadjichristoforou	13/03/07
Czech Republic	26/01/05	Mr J. Mach	15/12/15
Denmark	23/05/50	Ms. G. Hundahl	01/08/12
Dominica	18/06/92	Mr. L. Pascal	10/07/01
Dominican Republic	30/07/09	Mr. O.S. Reynoso	02/07/15
Ecuador	10/05/07	Dr. D. Ortega-Pacheco	27/01/16
Eritrea	10/10/07	Mr. S. M. Ahmed	02/10/08
Estonia	07/01/09	Mr H. Zingel	19/02/15
Finland	23/02/83	Ms. P. Blankett	03/05/11
France	03/12/48	Mrs. N. Deckert	05/08/15
Gabon	08/05/02	Prof. L. White	14/09/14
The Gambia	17/05/05	Mr. M. Bah	23/06/10
Germany	02/07/82	Mr. W. Duebner	01/02/12
Republic of Ghana	17/07/09	Mr. B. Nutsukpui	09/02/15
Grenada	07/04/93	Not Notified	-
Guatemala	16/05/06	Dr. F. D. Monge	05/11/08
Guinea-Bissau	29/05/07	Mr. I. Barros	03/02/15
Republic of Guinea	21/06/00	Mr. D.A. Telivel	12/02/14
Hungary	01/05/04	Mr. Z. Czirak	11/01/11
Iceland	10/10/02	Mr. J. Guðmundsson	06/06/12
India	09/03/81	Mr. V. Ranjan	02/06/15
Ireland	02/01/85	Mr. J. Fitzgerald	15/05/07
Israel	07/06/06	Ms R. Oberman	30/06/14
Italy	06/02/98	Mr. R. Rigillo	06/05/14
Japan	21/04/51	Mr. J. Morishita	21/06/13
Kenya	02/12/81	Not notified	
Kiribati	28/12/04	Mrs. R. Nikuata-Rimon	07/06/06
Republic of Korea	29/12/78	Ms. S. Hee Cho	10/09/15
Laos	22/05/07	Dr. B. Khambounheuang	01/10/07
Lithuania	25/11/08	Ms. L. Caplikaite	24/02/12
Luxembourg	10/06/05	Mr. C. Origer	10/06/05
Mali	17/08/04	Mr. S. Coulibaly	16/05/08
Republic of the Marshall Islands	01/06/06	Hon. M. Zackhras	19/06/10
Mauritania	23/12/03	Dr. A. M. Jiddou	16/05/11
Mexico	30/06/49	Dr. J. Maksabedian de la Roquette	12/12/13
Monaco	15/03/82	Prof. F. Briand	13/06/03
Mongolia	16/05/02	Dr T. Damdin	02/12/15

Cont.

Contracting Government	*Adherence*	*Commissioner*	*Appointment*
Morocco	12/02/01	Ms. Z. Rochdi	02/06/14
Nauru	15/06/05	Hon. C. Buraman	04/09/14
Netherlands	14/06/77	Mr. R. Feringa	14/04/15
New Zealand	15/06/76	Ms. R. Paterson (Interim)	01/05/15
Nicaragua	05/06/03	Mr. S. F. Müller	09/06/08
Norway	03/03/48	Mr. O. D. Stenseth	01/06/11
Oman	15/07/80	Dr. A. Al-Mazrouai	22/06/10
Republic of Palau	08/05/02	Mr. V. Uherbelau	19/02/09
Panama	12/06/01	Mr. M. Lopez Cornejo	31/07/14
Peru	18/06/79	Mr. L. R. Arribasplata Campos	14/05/13
Poland	17/04/09	Mrs. M. Lesz	14/05/09
Portugal	14/05/02	Mr. L.A. de Andrade Freitas	30/07/15
Romania	09/04/08	Dr. S. Nicolaev	22/07/08
Russian Federation	10/11/48	Ms. I.B. Fominykh	02/11/15
San Marino	16/04/02	Mr. D. Galassi	10/10/02
St Kitts and Nevis	24/06/92	Hon. N.A. Carty	15/02/13
St Lucia	29/06/81	Hon. J. Compton-Antoine	23/01/12
St Vincent and The Grenadines	22/07/81	Senator E. Snagg	05/03/03
Senegal	15/07/82	Dr. M. Goudiaby	24/05/15
Slovak Republic	22/03/05	Mr. B. Hrabkovsky	22/10/15
Slovenia	20/09/06	Mr. A. Bibič	20/01/10
Solomon Islands	10/05/93	Mr. S. Diake	15/03/04
South Africa	10/11/48	Mr. H. Oosthuizen	10/04/06
Spain	06/07/79	Ms C. Asencio	15/09/15
Suriname	15/07/04	Mr. M. Wirjodirjo	01/06/11
Sweden	15/06/79	Dr J. Hagberg	01/12/15
Switzerland	29/05/80	Mr. B. Mainini	03/06/05
Tanzania	23/06/08	Mr Zahor El Kharousy	09/08/14
Togo	15/06/05	Dr. A. Domtani	03/11/09
Tuvalu	30/06/04	Mr. P. Nelesone	13/07/04
UK	10/11/48	Mr. N. Gooding	01/03/12
Uruguay	27/09/07	Dr. C. Rodriquez Brianza	30/06/15
USA	10/11/48	Mr R.F. Smith III	09/09/14

Dr. S. Brockington, Executive Secretary to the Commission, January 2016

Preface

In light of the decision of the International Whaling Commission to move to biennial meetings, the previous series 'Annual Report of the International Whaling Commission' (ISSN: 1561-0721) has been discontinued and replaced by this new electronic, online free access biennial series 'Report of the Meeting of the International Whaling Commission' (*https://archive.iwc.int/?c=24440*). The series will contain the Chair's report of the biennial meeting, including the reports of all associated Committees[1], sub-committees and working groups. In addition, it will contain the reports of: (a) any 'in-person' Bureau meetings; and (b) technical workshops and other intersessional meetings that are held in the two-year period prior to the biennial meeting concerned. As in the previous Annual Report series, this series will also contain the text of the Convention and its Protocol, and the latest versions of the Schedule to the Convention and the Rules of Procedure and Financial Regulations.

This, the Report of the 65th Meeting of the International Whaling Commission, relates to the biennial meeting held in Portorož, Slovenia in September 2014. It also contains the reports of the following workshops:

(1) the Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic held in March 2014 in Anchorage, Alaska;
(2) the Report of the Whale Watch Operators' Workshop held in May 2013 in Brisbane, Australia;
(3) the Report of the IWC Workshop on Euthanasia Protocols to Optimise Welfare Concerns for Stranded Cetaceans held in September 2013 in London, UK;
(4) the Report of the Joint IWC-SPAW Workshop to Address Collisions Between Marine Mammals and Ships with a Focus on the Wider Caribbean held in June 2014 in Gamboa, Panama;
(5) the Report of the IWC Workshop on Mitigation and Management of Threats Posed by Marine Debris to Cetaceans held in August 2014 in Honolulu, Hawaii, USA;
(6) the Report of the 2013 Standing Working Group on Conservation Management Plans held in May 2013 in Brisbane, Australia; and
(7) the Report of the 2014 Standing Working Group on Conservation Management Plans: Progress on the Development and Implementation of CMPs held in September 2014 in Portorož, Slovenia.

At the 64th Annual Meeting, the Commission agreed to move from annual to biennial meetings; thus this new report covers work from the two-year period 2013-14. The next meeting of the Commission will take place in October 2016. Information can be found on our website at *http://www.iwc.int*.

The cover photograph shows an aerial view of Portorož taken during a scientific survey of the Adriatic Sea in July 2013.

G.P. DONOVAN

Editor

[1]The Reports of the Scientific Committee, which continues to meet annually, remain published as a supplement to the *Journal of Cetacean Research and Management* (*https://archive.iwc.int/?c=29*).

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SUMMARY OF MAIN OUTCOMES, DECISIONS AND REQUIRED ACTIONS FROM THE 65TH MEETING OF THE INTERNATIONAL WHALING COMMISSION

Issue/Agenda Item	Main outcomes
Aboriginal subsistence whaling *Item 4* Reports: Aboriginal Subsistence Whaling (ASW) Sub-Committee (IWC/65/Rep03); Scientific Committee (IWC/65/Rep01)	• The Commission received a report on the progress towards developing long-term *Strike Limit Algorithms* for the Greenland hunts and endorsed a *Humpback SLA* for Greenland. Work on the proposed Makah management plan was completed. • A full report on conversion factors for Greenland was received by the Scientific Committee. A revised need statement for Greenland was considered by the ASW Sub-Committee and in the Plenary. • The ASW working group on long-term issues met with hunters and reported progress to the ASW Sub-Committee. • The Commission adopted a Schedule amendment for four-year catch limits for the Greenland hunts and Resolution 2014-1 to work to improve the process for ASW in the future through a more consistent and long-term approach. This will include an expert Workshop to assist the ASW Sub-Committee and the Commission with respect to improved procedures for considering ASW catch limits, with a focus on consideration of need. The Commission endorsed the objectives and an outline proposal for the Workshop as given in IWC/65/ASWRep01rev1.
Sanctuaries *Item 5*	• A proposed Schedule amendment to create a South Atlantic Whale Sanctuary was not adopted. • The objectives and terms of reference for the second decadal review of the Southern Ocean Sanctuary were agreed as given in IWC/65/CC05. A key intent of the review process is to strengthen the conservation objectives of the Southern Ocean Sanctuary. The Chair of the Conservation Committee will liaise with the Scientific Committee to establish an intersessional group to oversee the process for the review.
Socio-economic implications and small-type whaling *Item 6*	• Japan reiterated its concern over the hardship suffered by its four community-based whaling communities since the implementation of the commercial whaling moratorium and made a number of points regarding paragraph 10(e) of the Schedule. • A proposed Schedule amendment to establish a catch limit for minke whales by small-type whaling vessels was not adopted.
Resolutions *Item 7*	**Resolution on Highly Migratory Species** • Resolution 2014-2 on highly migratory species was adopted. It seeks enhanced collaboration in the conservation of migratory cetaceans with other relevant intergovernmental organisations and requests the Secretariat to develop a draft work plan with regard to sharing of data and research priorities. Progress will be reviewed at IWC/66. **Resolution on Civil Society Participation and Transparency** • Resolution 2014-3 on Civil Society Participation and Transparency was adopted by consensus. **Resolution on the Scientific Committee** • Resolution 2014-4 on the Scientific Committee was adopted by consensus. **Resolution on Whaling under Special Permit** • Resolution 2014-5 on Whaling under Special Permit was adopted. **Resolution on Food Security** • A Resolution on food security was discussed but no consensus was reached; Ghana indicated that it would continue to refine the proposal during the intersessional period ready for presentation to IWC/66.
Status of whale stocks *Item 9* Reports: Scientific Committee (IWC/65/Rep01)	**Antarctic minke whales** • The Scientific Committee continued its work to complete an in-depth assessment of the Antarctic region in 2015. **Southern Hemisphere humpback whales** • The Scientific Committee completed its eight-year assessment of seven breeding stocks and will present a synthesis of the complete assessments in 2015. **Southern Hemisphere right whales** • The Scientific Committee expressed concern over the continuing large annual mortality of calves at Península Valdés, Argentina and commended the work of a research group investigating the problem. It also expressed concern over a proposed windfarm development near important habitat of the endangered eastern South Pacific right whale population in Chile. It welcomed reports on the two Conservation Management Plans (CMPs) (see Item 11). **Southern Hemisphere blue whales** • The Scientific Committee is evaluating available information to see if it can start an area-based in-depth assessment. *Cont.*

Status of whale stocks *cont.* *Item 9* Reports: Scientific Committee (IWC/65/Rep01)	**North Pacific sei whales** • The Scientific Committee has evaluated the available information and agreed to start in-depth assessment at next year's meeting that it expects to complete in 2016. **Western North Pacific gray whales** • The Scientific Committee is undertaking a rangewide review of the status of North Pacific gray whales. It welcomed information on conservation efforts in Japan and reiterated support for the work of the IUCN Western Gray Whale Advisory Committee. Concern was expressed over trap net fishing and a proposed development project on eastern Sakhalin Island near the sensitive feeding and nursery grounds. **North Pacific and North Atlantic right whales and small stocks of bowhead whales** • Grave concern was expressed over these small stocks, where ship strikes and entanglements are important threats. **IWC-POWER North Pacific research cruises** • The aim of the IWC-POWER (North Pacific Ocean Whale and Ecosystem Research) programme is to contribute information on abundance and trends in abundance of large whales and to identify the causes of any trends that do occur. The fifth (2014) cruise has been completed and the 2015 cruise plan will be finalised intersessionally. Archiving and analyses of the individual identification photographs, genetic samples and sightings data is progressing.
Ship strikes *Item 10.2* Reports: Scientific Committee (IWC/65/Rep01) Conservation Committee (IWC/65/Rep05)	• The Scientific Committee reviewed and endorsed the work of the ship strikes co-ordinators and reiterated the importance of the IWC global database in evaluating the issue and developing mitigation measures. A number of specific recommendations were made and presented to the Conservation Committee. • The most effective mitigation measure is to separate whales and ships, but when this is not possible, reducing vessel speed is helpful, which has implications for intensified collaboration between the IWC and the International Maritime Organization (IMO). • The Commission received the Report of the Ship Strikes Working Group and endorsed all the recommendations from the ship strikes Workshop held in Panama in 2014 (IWC/65/CCRep01), including that the IWC should develop a long-term working relationship with the IMO.
Conservation management plans (CMPs) *Item 11* Reports: Scientific Committee (IWC/65/Rep01) Conservation Committee (IWC/65/Rep05)	• The Scientific Committee developed a list of potential candidate large whale populations for CMPs, requested advice on whether a similar list of small cetacean populations should be developed, recommended updating of the template for threat-based CMPs and noted that marine debris is an appropriate candidate for a threat-based CMP. The SC discussions and recommendations were presented to the Conservation Committee. • The Commission endorsed a number of recommendations by the Conservation Committee including a suggestion that the issue of marine debris is incorporated and addressed in CMPs, that further review and analysis is required on the concept of a threat-based marine debris CMP and that the Scientific Committee should undertake further analysis on priority candidates of small cetaceans that would benefit from the implementation of a CMP. **Western North Pacific gray whale CMP** • A memorandum of co-operation on the conservation of western North Pacific gray whales was signed by Japan, Russian Federation and the USA during the meeting.
Whalewatching *Item 12* Report: Conservation Committee (IWC/65/Rep05)	• The Scientific Committee expressed concern over tourism involving feeding boto in Brazil and poor management of whalewatching in Bocas del Toro, Panama and some swim-with operations. It encouraged continuation of workshops to improve whalewatching in Oman. It also discussed how to assist the Conservation Committee on the development of the online Handbook on Whalewatching. • The Standing Working Group on Whalewatching (SWG-WW) work plan for the proposed intersessional period of 2014-16 was endorsed.
Other regular Conservation Committee items *Item 10*	• The Commission endorsed the Conservation Committee's progress with other ongoing areas of work, these being: (1) an investigation of inedible 'stinky' gray whales in the Chukotkan aboriginal subsistence hunt; (2) southern right whales in Chile and Peru; (3) National Reports on Cetacean Conservation; and (4) marine debris. The issue of inedible 'stinky' gray whales was referred to the Scientific Committee. • Marine debris should be a standing agenda item for the Scientific Committee.

Whale killing methods and associated welfare issues (WKM&AWI) *Item 13* Report: Working Group on Whale Killing Methods and Associated Welfare Issues (WKM&AWI) (IWC/65/Rep06)	• The Commission welcomed the reports from several Governments on their hunting operations or events requiring euthanasia. They also welcomed reports from Norway and the USA on their contributions to improvements in whaling operations. • NAMMCO provided a summary of its manuals for hunters that focussed on safety for hunters and rapid death for the target species of the hunts. • The Commission recommended that work related to entanglements, including training workshops and capacity building, the development of a global database and convening future workshops continue, including the post of Technical Advisor to the Secretariat. • The Report of the Workshop on Euthanasia Protocols (IWC/65/WKM&AWIRep01) and its recommendations were endorsed. • The Commission agreed revised terms of reference for the current intersessional working group which is now renamed as 'Working Group on Whale Killing Methods and Welfare Issues', (WG-WI). Its task is to review information and provide advice to the Commission on issues relating to whale killing methods and all aspects associated with ensuring good welfare of cetaceans that are hunted or otherwise impacted by human activities (See IWC/65/WKM&AWI05rev2). • An updated action plan was also adopted in order to reflect the current scope the IWC's welfare work. • Additional voluntary contributions were announced by the UK (£20,000 towards the work of the WG-WI) and a consortium of NGOs (£10,800).
The Revised Management Procedure (RMP) *Item 14* Reports: Scientific Committee (IWC/65/Rep01)	**Revised Management Procedure (RMP)** • The Commission reviewed progress on the Scientific Committee's work on the RMP and related matters which included matters related to the MSYR, testing, possible amendments and survey guidelines. The *Implementation Review* for western North Pacific common minke whales was completed although more work may be required if a variant with research is proposed. Those for North Atlantic common minke whales and fin whales are ongoing and should be completed in 2015/16. • No work was undertaken on the Revised Management Scheme.
Scientific permits and related issues *Item 15* Reports: Scientific Committee (IWC/65/Rep01)	• Two expert Workshops were held in the intersessional period, one to review the results of the completed Iceland special permit programme and the other to review the then ongoing JARPA II programme. • The judgment of March 31, 2014 of the International Court of Justice (ICJ) in the case concerning whaling in the Antarctic was discussed. The Commission passed a Resolution on special permits (2014-5) that included instructions to the Scientific Committee and a request on the steps that must be taken before permits are issued.
Safety issues at sea *Item 16*	• Japan drew attention to the violent activities against its research vessels in the Southern Ocean during the last two seasons and requested necessary actions by the relevant member states concerned. • The Commission reiterated that it does not condone, and in fact condemns, any activities that are a risk to human life and property in relation to the activities of vessels at sea (see Resolution 2011-2).
Catches by non-member nations *Item 17* Reports: Scientific Committee (IWC/65/Rep01)	• The Commission was pleased to receive catch data from Canada's bowhead hunt. The Secretary will continue to request information on catches and quotas from Canada. • The Secretary will continue to request information from the Government of Indonesia on their whale catches.
Infractions *Item 18* Report: Infractions Sub-Committee (IWC/65/Rep04)	• The Commission reviewed: - infractions reported in the 2012, 2012/13, 2013 and 2013/4 seasons; - follow-up reports from previous years; - information on the domestic surveillance of whaling operations; and - information on the provision of data. • The Commission discussed the Report of the Infractions Sub-Committee and referred unresolved issues concerning catches taken in Greenland in 2013 to the Working Group on Operational Effectiveness and Cost Saving Measures which will report to IWC/66. • Following the recent judgement of the International Court of Justice (ICJ), the Commission agreed that the IWC databases should show catches taken under the Japanese JARPA II programme as taken under special permits issued by Japan with a footnote indicating they have been discussed by the ICJ and including a reference both to the court judgement and the discussions documented in the Chair's Report of this meeting.
Environmental and health issues *Item 19* Reports: Scientific Committee (IWC/65/Rep01); Conservation Committee (IWC/65/Rep05)	**Scientific work** • The Commission reviewed progress on the Scientific Committee's ongoing work on environmental concerns including, pollution, disease, sound and climate change. With respect to chemical pollution the IWC's POLLUTION 2000+ Phase III has been successfully completed and a new programme recommended. The Committee received reports of Workshops on soundscape mapping and the Commission's Arctic Workshop; it endorsed the recommendations. A number of recommendations on sound were made with respect to mitigation and provision of data. This work was presented to the Conservation Committee. • The Commission also reviewed the Report of the Arctic Workshop (IWC/65/Rep07rev1), endorsed its recommendations and in particular noted a request to establish greater contact with the Arctic Council.

Small cetaceans *Item 20.1* Reports: Scientific Committee (IWC/65/Rep01); Conservation Committee (IWC/65/Rep05)	**Small cetaceans status and review** • The Scientific Committee reviewed small cetaceans in east Asian waters in 2013 and the eastern Mediterranean and Red Sea in 2014. Concern was expressed over a number of populations that were subject to high bycatch rates in Korea and Japan and to bycatch and the illegal use of explosives in the Mediterranean. Recommendations were also made concerning small cetacean hunts in Japan and live-captures of white whales and killer whales from the Okhotsk Sea. In reviewing progress on previous recommendations, serious concern and the need for action was expressed over the vaquita in Mexico, Maui's dolphins in New Zealand, river dolphin species in Laos, Cambodia, China and Brazil, franciscana in Brazil, Uruguay and Argentina, live-captures and drive hunts in the Solomon Islands, bycatches and occasional hunts in Ghana. It reiterated a long-standing statement that no removals should be authorised until full assessments of sustainability are completed. • The Commission received several progress reports on conservation actions that were being taken or proposed for populations/species for which the Scientific Committee has expressed concern. **The fund for Small Cetacean Conservation Research** • Appreciation was expressed to governments and NGOs that have contributed to the Voluntary Fund. The Commission was pleased to note the excellent work undertaken under this Voluntary Fund. Since it began in 2011, 14 projects have been funded to the value of around £350,000. The focus is on research that will lead to improved conservation status with an emphasis on developing countries and critical conservation needs. • The Commission recommended the 'task team' approach suggested by the Scientific Committee to respond to situations where urgent attention is required to protect small cetacean populations. The approach will allow the Committee to more swiftly evaluate a situation and provide advice and recommendations intersessionally. • Additional donations to the fund were announced by the UK (£10,000), Italy (€15,000 to support the participation of experts in the work on small cetaceans), the Netherlands (€85,000 to assist the IWC to enhance its work on small cetaceans, to work further on non-lethal research methods and to enhance dialogue on alternatives for subsistence whaling) and a consortium of NGOs (£16,000).
Regional non-lethal research partnerships *Item 20.2* Reports: Scientific Committee (IWC/65/Rep01)	• The Commission welcomed a report on the Southern Ocean Research Partnership (SORP) which included updates on the existing projects. • Further international involvement in this programme was encouraged. • Some Governments requested the continued funding of the SORP co-ordinator through the Research Fund.
Scientific Committee working methods *Item 20.3*	• The Scientific Committee reported on work to review and improve its working methods. Improvements highlighted included the process to develop the research budget, review research proposals, communicate with the Commission and others and data access under Annex P.
Finance and Administration *Item 22* Report: Finance and Administration Committee (IWC/65/Rep02)	• The Working Group on Providing Options to Governments with Limited Means to Participate in the Commission's Work was re-constituted under the chairmanship of Hideki Moronuki (Japan). • The Commission expressed appreciation for the enhanced new IWC website. • The Commission endorsed the work of the Working Group on Operational Effectiveness and Cost Saving Measures and recommended that the Working Group continue its work with an enhanced membership and include: (1) consideration of the new biennial meeting pattern; and (2) a review of the operations of the Commission such that its limited resources are used effectively. A new Working Group was established to deal with matters outside the mandate of the present Working Group. • The Commission recommended a change to Rule of Procedure P.3 to allow the Secretariat to circulate a list of dates and subject titles of confidential communications to all Commissioners and Contracting Governments. • The Secretariat was requested to continue to identify cost savings including staffing levels and in particular to investigate options to reduce bank charges. • The Secretariat was requested to review the organisation of the new biennial meeting structure, for report to IWC/66, including contacting Contracting Governments to obtain feedback on IWC/65. • The Chair indicated that she would recommend the Bureau to introduce a 'cut-off' after day three such that all discussion and decisions on Resolutions and Schedule amendments would be completed by this time.

Financial Statements and budget *Item 23* Report of the Finance and Administration Committee (F&A) (IWC/65/Rep02)	• The Commission adopted the 2012 and 2013 Financial Statements and approved the Provisional Financial Statement for the year ending 31 August 2014 subject to audit. • The Commission adopted an addition of Rule of Procedure A.3 relating to contact details of national offices responsible for making payments. • The Commission adopted the 2015 budget as presented in IWC/65/07 except including an amendment to reduce the 1.5% increase in contributions to 0%, partly by reducing the Scientific Committee contingency budget to 10%. For 2016, the Commission placed square brackets around the amount for the specialist Workshop to review special permits, pending the outcome of the Scientific Committee's deliberations on the Annex P process. • The Committee took note of the forecast for 2017-18 and adopted the proposed income and expenditure for the bridge period (IWC/65/7). • In future media fees will be waived and the observer fee will remain at its current level in 2016. • The contributions formula will be considered by the Budgetary Sub-Committee (BSC) at IWC/66 and the contributions formula will be made available through the IWC website. • The length of term served by the Chair/Vice-Chair of the BSC is changed to cover two biennial cycles. The two empty 'open seats' on the BSC could be filled by the Chair and Vice-Chair of the Commission. • The Commission expressed appreciation to the retiring chair of the F&A Committee, Donna Petrachenko (Australia) for her excellent work over several years. Ryan Wulff (USA) was elected Chair of the F&A Committee. • A suggestion that a percentage of money donated to voluntary funds should be transferred to the IWC general fund was referred to the Working Group on Operational Effectiveness and Cost Saving Measures for consideration in the intersessional period.
Date and place of Annual Meetings	• No date or place was proposed for the 2016 meeting. • The Government of the USA kindly agreed to host the Scientific Committee meeting from 20 May-4 June 2015 in San Diego.
Elections and Bureau *Items 25 and 26*	• Bruno Mainini (Switzerland) was elected as Chair of the Commission and Joji Morishita (Japan) was elected as Vice-Chair. • Uruguay, Ghana, Australia and St Lucia were elected to the Bureau. Thus the total membership of the Bureau will comprise the Chair (Switzerland), the Vice-Chair (Japan), the Chair of the F&A Committee (USA), and the four elected members.

Chair's Report of the 65th Meeting

At the end of IWC/65 the Commission adopted, by consensus, a Summary of the Main Outcomes, Decisions and Required Actions arising from the meeting (see Item 28.1). This summary document, IWC/65/Outcomes, is available through the IWC website and was distributed to Commissioners and Contracting Governments through Circular Communication IWC.ALL.217 of 25 September 2014.

This Chair's Report was completed after the close of the meeting. It was compiled by a team of rapporteurs who worked alongside the Secretariat for the duration of IWC/65, and was then reviewed by the Secretariat and approved by the Chair of IWC/65 (Jeannine Compton-Antoine, St Lucia).

1. INTRODUCTORY ITEMS

The 65th Meeting of the International Whaling Commission (IWC) took place at the Grand Hotel Bernardin, Portorož, Slovenia from the 15-18 September 2014. This was the first meeting since the Commission agreed to move to a biennial schedule for its meeting in 2012. Jeannine Compton-Antoine (St Lucia) chaired the meeting which was attended by 64 of the 88 Contracting Governments. No non-member governments were present, and six intergovernmental organisations and 36 non-governmental organisations attended. A list of the delegates and observers is given as Annex A. Meetings of the Scientific Committee were held from 3-15 June 2013 at Jeju Island, Republic of Korea and from 12-24 May 2014 at Bled, Slovenia. The Commission's other Sub-Committees met at the Grand Hotel Bernardin from 11-13 September 2014.

1.1 Welcome address

Mr Karl Erjavec

His Excellency Mr Karl Erjavec, the Minister of Foreign Affairs welcomed delegates and said that it was an honour for Slovenia to host such an important conference on sustainable use and international cooperation. He stressed that Slovenia is well aware of the importance of the environment and the ecosystem but that this can only be enjoyed if we also take care of our health, water and economy. These issues need to be considered in the context of world peace and action on climate change, particularly change in sea level and ocean acidification, and the associated impacts on flora and fauna including whales. For these reasons, Slovenia pays particular attention to climate change and, with regards to foreign affairs, considers peace and international sustainability to be of the greatest importance.

The Minister said that Slovenia is proud of its bio-diversity and makes great efforts to protect nature and use green technology. Slovenia is a member of the EU as well as a party to ACCOBAMS and is proactive in policy development and partnership working. He said that Slovenia will work diplomatically to find compromises, including listening to the views of all including NGOs, media and experts. In closing he wished the participants well, and hoped that they would undertake good work and have a pleasant stay in Portorož.

Ms Tanja Strniša

The State Secretary for Agriculture and the Environment, Ms Tanja Strniša welcomed all participants to the meeting. She noted that the conservation of biodiversity and sustainable use of natural resources are difficult and complex issues. Slovenia faces these issues on a daily basis as it has one of the highest levels of biodiversity in Europe, with over 26,000 plant and animal species and varied yet fragile ecosystems ranging from coastal to karstic hills and alpine peaks. However, there is also a need to pursue economic development, hence it is a daily challenge to find solutions to both economic development and the conservation of biodiversity and other natural resources. It is therefore necessary for different stakeholders to understand each other's perspectives and seek solutions of benefit to all, particularly in relation to international issues including migratory species such as cetaceans. The Minister thanked the Secretariat for its excellent cooperation and hoped that the joint efforts of all would produce good results at the meeting.

Dr Simon Brockington

In response, the Executive Secretary of the IWC, Dr Simon Brockington thanked Slovenia for hosting the IWC meeting in Portorož and highlighted the productive period since the Commission last met in 2012. He emphasised the commitment of Contracting Parties to the IWC which was demonstrated by the numerous groups, committees, disciplines and countries that had worked intersessionally to support the Commission's development. He noted the sustained levels of voluntary contributions received to support the work of different Sub-Committees. He reflected that this IWC meeting provides a significant opportunity to move forward on a number of issues, including long-standing ones. He commended the Bureau for the work undertaken in preparing for IWC/65 and wished all delegates a successful meeting.

Ms Jeannine Compton-Antoine

The Chair of IWC, Ms Jeannine Compton-Antoine welcomed all delegates. She thanked the Government of Slovenia for hosting both the current IWC meeting and the Scientific Committee meeting which was held in Bled in May 2014. She hoped delegates would have time to see some of the country during their stay and concluded by wishing delegates, Commissioners and observers a constructive and fruitful meeting.

Ministerial interventions

Declarations made by three Government Ministers are attached as Annex D.

1.2 Opening Statements

Opening Statements from Contracting Governments and intergovernmental and non-governmental observer organisations (IGOs and NGOs respectively) were received in writing and distributed through the IWC website.

1.3 Secretary's Report on Credentials and Voting Rights

The Secretary reported that the Credentials Committee (Japan, New Zealand and the Secretary) had met and found that the credentials of all Contracting Governments present were in order. With regard to entitlement to vote, the Secretary announced that the right to vote for the following countries had been suspended because of non-payment of the 2013/14 financial contributions: Cyprus, Mali, Mauritania, Portugal and Solomon Islands. In addition, the voting rights of the following countries that had been suspended on an earlier occasion remained in force because financial

contributions had not been received: Belize, Benin, Congo, Dominica, Gambia, Guatemala, Guinea-Bissau, Kenya, Nauru, Nicaragua, Romania, Senegal, St Vincent and The Grenadines[1], Suriname and Togo.

1.4 Meeting arrangements

The Chair requested that interventions should avoid repetition of previous discussions, and noted that the Secretariat would be maintaining a 'Status of Agenda' document on the IWC website, recording any items that had been left open.

The Chair indicated that Non-Governmental Organisation (NGO) observers would be called to speak after Contracting Governments as long as sufficient time was available She encouraged NGO observers to co-ordinate amongst themselves and to notify the Chair in advance of any agenda items where they wished to make an intervention.

1.5 Review of documents

The Chair drew attention to the list of documents to be considered at the 65th Meeting; all documents are available through the IWC website[2]. The list is provided as Annex C (this was originally IWC/65/02).

2. ADOPTION OF THE AGENDA

The Chair drew attention to the Annotated Provisional Agenda (IWC/65/01rev3) and to her proposed order of business. The Agenda was **adopted** without comments and is given as Annex B.

3. PRESENTATION OF THE SCIENTIFIC COMMITTEE

The Chair noted that the full reports of the Scientific Committee's meetings in 2013 (IWC/65/Rep01 (2013)) and 2014 (IWC/65/Rep01 (2014))[3] had been circulated to Commissioners and Contracting Governments and posted on the IWC website within one month of the close of those meetings, i.e. well in advance of the opening of IWC/65. Following the advice of the Bureau to maximise the amount of time available for decision making in Plenary, the Chair recalled the changed procedure described in Circular Communication IWC.CCG.1105 that discussion on individual agenda items would move directly to Commissioner interventions without an oral summary from the Chair of the Scientific Committee.

In recognition of the extent of the detailed scientific work undertaken the Chair of the Scientific Committee (Toshihide Kitakado) made a short introductory presentation of the Committee's achievements in 2013 and 2014. The Chair noted that in the time available he would only be able to mention the topics discussed and would not be able to highlight the recommendations. He referred to IWC/65/24 which provided a brief integrated overview of the main outcomes and recommendations of the work undertaken in both years with a focus on those most relevant to the Commission. IWC/65/24 is included as Annex O.

Regarding the Revised Management Procedure (RMP), he noted that the Committee had completed its review of the Maximum Sustainable Yield Rate (MSYR) in 2013, had undertaken some further technical work on a proposed amendment of the *Catch Limit Algorithm* (*CLA*), and was updating its 'Requirements and Guidelines for Conducting Surveys'.

With regard to the *Implementation* of the RMP for specific populations, the review for the western North Pacific common minke whales had been completed in 2013. The *Implementation Reviews* for North Atlantic fin and common minke whales should be completed in 2015. In 2014, the feasibility of a *pre-Implementation assessment* for North Atlantic sei whales was discussed and work will continue; the *Implementation Review* for western North Pacific Bryde's whales has been deferred to 2017 when additional information will be available.

Concerning non-deliberate human-induced mortality including bycatch and ship strikes, the Committee had agreed criteria for the determination of the cause of death from carcases. The issue of marine debris had been addressed in two Workshops (SC/65a/Rep06[4] and IWC/65/CCRep04[5]) organised jointly between the Scientific and Conservation Committees (see also Annex G [originally IWC/65/Rep05rev2] Item 9).

With respect to scientific aspects of aboriginal subsistence whaling (ASW), the Committee had continued its work on developing *Strike Limit Algorithms* (*SLAs*) for the Greenland hunts. It completed its work on a humpback whale *SLA* and recommended it to the Commission whilst the *SLA* for bowhead whales should be completed by the 2015 meeting. The development of *SLA*s for fin and common minke whales was continuing and is expected to be completed in 2017/18. The Committee had also completed its review of the proposed Makah whaling management plan for eastern North Pacific gray whales. The Chair reiterated the Committee's long-standing recommendation that the scientific aspects of a proposed aboriginal subsistence whaling scheme (AWS) constitute an important component of the Aboriginal Subsistence Whaling Management Procedure (AWMP) approach. This work was presented to the Commission's Aboriginal Subsistence Whaling Sub-Committee (Annex F [originally IWC/65/Rep03] Item 3).

The Committee provided management advice for all ASW hunts; this was also presented to the Commission's Aboriginal Subsistence Whaling Sub-Committee. For those that had strike limits already set by the Commission for 2013-18 (Bering-Chukchi-Beaufort Seas bowhead whales, eastern North Pacific gray whales and humpback whales off St Vincent and The Grenadines), the advice was that the limits would not harm the stocks. For the Greenland hunts, the Committee had advised that the limits requested by Greenland would not harm the stocks.

In terms of the Committee's work on the status of other whale stocks, the highlights were that: the assessment of Southern Hemisphere humpback whales has been concluded and an overview of this eight years of work will be provided next year; work to determine the factors that govern the distribution and density of Antarctic minke whales in order to better understand possible trends is ongoing; and an in-depth assessment of North Pacific sei whales will commence in 2015. Finally the work undertaken under the IWC-POWER and IWC-SORP programmes has provided excellent results.

The work on stock definition including the establishment of laboratory and analytical guidelines, which is directly relevant to issues of conservation and management, has been productive and is ongoing.

[1]Payment was received from St Vincent and The Grenadines during the present meeting.
[2]*http://iwc.int/iwc65docs.*
[3]Published as *J. Cetacean Res. Manage. (Suppl.)* 15 [2014] and *J. Cetacean Res. Manage. (Suppl.)* 16 [2015] respectively.

[4]*Published as:* IWC. 2014. Report of the IWC Scientific Committee Workshop on Marine Debris, 13-17 May 2013, Woods Hole, USA. *J. Cetacean Res. Manage. (Suppl.)* 15:519-41.
[5]Published in this volume.

Work on environmental concerns covered a wide range of topics including: the State of the Cetacean Environment Report (SOCER); chemical pollutants, especially the IWC's POLLUTION 2000+ and new 2020 programmes; oil spill prevention and response; cetacean emerging and resurging diseases (CERD); effects of anthropogenic sounds, including chronic noise, seismic surveys and military sonar; many different habitat related issues; and impacts of climate change on cetaceans.

Under the topic of ecosystem modelling, a review of relevant work undertaken outside the Scientific Committee was discussed, the ways in which ecosystem models might contribute to simulation testing of the RMP were explored, additional analyses of data on the body condition of Antarctic minke whales were undertaken and a review of spatial/habitat modelling was presented.

The Committee was pleased with the excellent progress on projects sponsored by the Voluntary Fund on Small Cetaceans that had been reported directly to the Conservation Committee (see Annex G, Item 10). However, the Committee drew attention to many serious conservation issues affecting small cetacean populations around the world.

Regarding whalewatching, several studies on assessing the effect of whalewatching on cetaceans were reviewed; a new working group 'Modelling and Assessment of Whalewatching Impacts (MAWI), was established; the Commission's five-year strategic plan was reviewed; a draft outline of the Handbook was considered; and whalewatching in Oman, particularly with respect to the endangered humpback whale population of the Arabian Sea and small local populations of *Sousa* was investigated. This work was also presented to the Conservation Committee (Annex G, Item 6).

Two special permit programmes were reviewed: the completed Icelandic special permit in 2013 and the then-ongoing JARPA II programme in 2014. Not all members of the Committee participated in discussions related to the JARPA II review at the 2014 Annual Meeting, for reasons related to the International Court of Justice (ICJ) case (see also the discussion under Item 24.2).

Regarding sanctuaries, the Committee established a correspondence group to draft a summary of information relating to the decadal review of the Southern Ocean Sanctuary, and agreed to begin a review of the proposed South Atlantic Whale Sanctuary, to be completed in 2016. It requested advice from the Commission about the review process.

With regard to Conservation Management Plans (CMPs), in 2013 the Committee identified four new potential candidates based on population status and three based on knowledge of threats. The Committee also noted that marine debris may be a potential candidate for threat-based CMPs and requested advice from the Commission on whether it required advice on candidate CMPs for small cetaceans.

The Chair of the Scientific Committee concluded by providing a short report on the Committee's review of its working methods and recognising that there were many other important matters for which there was insufficient time to report during his presentation.

The Chair of the Scientific Committee expressed his sincere appreciation to the host countries, Korea and Slovenia, for their warm hospitality and for providing excellent working environments.

4. ABORIGINAL SUBSISTENCE WHALING

The ASW Sub-Committee met on 12 September 2014 and its report (originally IWC/65/Rep03) is provided as Annex F. The Chair of that Sub-Committee (Bruno Mainini, Switzerland) summarised its findings to the Plenary session (below).

4.1 Aboriginal Subsistence Whaling Management Procedure

4.1.1 Report of the Aboriginal Subsistence Whaling Sub-Committee

4.1.1.1 PROGRESS WITH THE DEVELOPMENT OF *SLA*s FOR GREENLAND SUBSISTENCE WHALING

The Sub-committee welcomed the progress made by the Scientific Committee on developing *SLA*s for Greenland hunts. It was particularly pleased that the Committee had completed the *Humpback SLA* and recommended it to the Commission. The Scientific Committee had agreed that the full report on conversion factors it had received from Greenland in 2014 meant that it did not need to receive annual updates and that future reports should go directly to the Commission through its Aboriginal Subsistence Whaling Sub-Committee and be incorporated in need statements as necessary.

4.1.1.2 *IMPLEMENTATION REVIEW* FOR GRAY WHALES

The Sub-Committee noted that the Scientific Committee had completed its *Implementation Review* for eastern North Pacific gray whales, including the proposed Makah management plan in 2013.

COMMISSION DISCUSSIONS AND ACTION ARISING

The Commission **endorsed** the Sub-Committee report (see also Item 24).

4.2 Aboriginal Whaling Scheme (AWS)

4.2.1 Report of the Aboriginal Subsistence Whaling Sub-Committee

The Sub-Committee noted the Scientific Committee's view that the AWS provisions constitute an important and necessary component of safe management under the AWMP and *SLA*s. The USA had indicated that it could not support adoption of the AWS at this time. It believed that the current Aboriginal Subsistence Whaling Management regime set forth in Schedule paragraph 13(a) has worked well for guiding the IWC in its management of subsistence hunts for over 30 years and that any AWS tool must be a true improvement over the IWC's current procedure.

There were no further discussions under this agenda item.

4.3 Aboriginal Subsistence Whaling Working Group (ASWWG)

The ASWWG met on 10 September 2014. The Chair of the ASWWG reported to the ASW Sub-Committee (see Annex F, Appendix 4). The ASWWG's remit is to address previously recognised issues that require in-depth consideration prior to the Commission's review of ASW strike limits in 2018.

The ASWWG proposed two main actions for the intersessional period: (1) that the USA, Denmark and the IWC's Head of Science develop a proposal for a workshop to address high priority long term issues (this was developed after the meeting of the ASWWG; see Annex F, Appendix 4, Adjunct 2); and (2) that Japan, the USA and the IWC Head of Science prepare a discussion document on the issue of local consumption and commercialism. The proposed Workshop was expected to take place in 2015, to *inter alia* develop a proposal or options for addressing those issues including a broad consideration of the issue of 'standardised need statements'. The results of the workshop would be

circulated well in advance of the ASW Sub-Committee and Commission meetings in 2016. This proposal is relevant to part of the action required under Resolution 2014-1 (originally IWC/65/15) on Aboriginal Subsistence Whaling.

It was suggested that a Steering Group be established to finalise the Workshop, comprising: Argentina, Austria, Denmark, Japan, Russian Federation, Switzerland, the USA, the IWC Head of Science and two Scientific Committee members. Guidance contained within Annex F (Appendix 4, Adjunct 2) will be of assistance when planning the Workshop.

4.3.2 Commission discussions and action arising

The Commission **endorsed** the proposed Workshop and recommendations. The Chair noted that, although there was currently no funding for the workshop, the establishment of an ASW Voluntary Fund had been proposed and she invited countries to contribute (see also Item 22.9).

4.4 Annual review of aboriginal subsistence whaling catch limits

The ASW Sub-Committee noted (see Annex F, Item 6) that the Scientific Committee had provided management advice for all ASW hunts. For those that had strike limits already set by the Commission for 2013-18 (Bering-Chukchi-Beaufort Seas bowhead whales, eastern North Pacific gray whales and humpback whales off St Vincent and The Grenadines), the advice was that the limits would not harm the stocks. For the Greenland hunts, the Committee had advised that the limits requested by Greenland would not harm the stocks.

4.5 Proposals for Aboriginal Subsistence Whaling catch limits

4.5.1 Proposal to establish Greenland catch limits

4.5.1.1 REPORT OF THE ASW SUB-COMMITTEE

The Sub-Committee had considered three documents, the proposed Schedule amendment for the Greenland hunts (IWC/65/16), the related proposed Resolution (IWC/65/15) and an updated Greenlandic need statement (IWC/65/17). Despite extended discussion at the Sub-committee (Annex F, Item 6), consensus could not be reached on these proposals.

4.5.1.2 COMMISSION DISCUSSIONS

4.5.1.2.1 PRESENTATION OF DOCUMENTS BY DENMARK

Denmark introduced the proposed Schedule amendment and need statement, noting that these are part of a 'package' proposal with the proposed Resolution by Italy on behalf of the EU to address the short-term and long-term issues relating to ASW. Denmark thanked those that had been involved in the consultations, including the Bureau, the Chair of the ASWWG, the IWC Secretariat, the EU and other ASW members. Denmark emphasised their commitment to continued active participation in the discussions and to working constructively with others in order to allow aboriginal hunters to utilise resources in a meaningful and sustainable way.

Denmark (Greenland)[6] noted that they are a self-governing nation under the sovereignty of Denmark and that they are dependent on the sustainable use of marine resources, including whales. It expressed the hope that the IWC would take decisions that are based on best-available scientific knowledge and with respect for the cultural, nutritional and socio-economical needs of *Kalaallit* (Greenlanders) and, in this respect, also fulfil the obligations of the IWC Convention.

[6]The term 'Denmark (Greenland)' is used in this report when a Greenlandic representative on the Danish delegation made an intervention.

Denmark (Greenland) recalled the objectives on ASW accepted by the Commission and provided an overview of the ASW-related legal and voluntary obligations within the IWC framework. Greenland considered that the legal obligations were found in relevant paragraphs of Article V of the Convention and in paragraphs 13 and 14 of the Schedule. As described in IWC/65/17, Greenland noted that, in addition, a Resolution requesting information on the utilisation of the meat and several Resolutions on killing methods were relevant in the Greenland context.

Denmark (Greenland) drew attention to its updated need statement contained in IWC/65/17 and highlighted the importance that Greenland gives to setting quotas that are based on sound science. It noted that whaling has taken place in Greenland for thousands of years and that having to justify it to the IWC is a recent obligation. Greenland mentioned the hunting methods employed (i.e. the rifle hunt from small boats and harpoon cannon hunts from fishing vessels) and stressed the importance of whale hunting to the traditions and food needs of the people of Greenland. It also stated that most whale products (>95% in 2013) are shared with families or sold to municipality institutions (open-air markets and one plant in Maniitsoq). A small amount (<5% in 2013) is purchased by retailers and restaurants. No exports are allowed.

Denmark (Greenland) noted that the West Greenland catch limits were originally based on average yearly catches during 1965-85 (i.e. prior to restrictive quotas). The documented need has not been met by these catch limits and the human population in Greenland has increased since then; catches of other key species of marine mammals and seabirds have decreased in recent years. Greenland estimated that the need today is for 799 tons.

Denmark (Greenland) highlighted that the Scientific Committee's recommendation that Greenland's request for 164 minke whales, two bowhead whales, 19 fin whales and 10 humpback whales off West Greenland and 12 minke whales off East Greenland would not harm the respective stocks.

4.5.1.2.2 IWC/65/15 RESOLUTION ON ABORIGINAL SUBSISTENCE WHALING (EU)

Italy, on behalf of the EU states who are members of the IWC (hereafter 'Italy on behalf of the EU'), presented its proposed Resolution (IWC/65/15) noting that it supports ASW to fulfil aboriginal needs. The proposal aimed to strengthen IWC management through a more consistent and mid- to long-term approach. It further aimed to encourage participation by IWC members in the work of the ASW Sub-Committee. Finally, it requested the Scientific Committee to give priority to ASW by addressing key issues through its 2014-18 work plan.

4.5.1.2.3 DISCUSSION

The Republic of Guinea, Ghana, Japan, Norway, St Lucia and USA supported the proposed Schedule amendment. The Republic of Guinea further noted that the population of Greenland required cetacean products as part of their food security and cultural needs. It considered that the quotas requested would not harm the whale stocks, and were in line with the advice of the Scientific Committee.

Japan confirmed its strong support for the proposed Schedule amendment. It noted the perception of some that local use is preferable to commercial use but thought that local consumption always involved a commercial element. It hoped that the proposed discussion paper on local consumption versus commercialism agreed under Item 4.3 would inform this issue. It stressed the importance of

traditions and did not think that customs should be changed just because alternatives were available. It also considered that countries should not impose their values on each other.

Iceland considered that all countries should be able to benefit from their natural resources and, as it considered Greenlandic ASW sustainable, it supported the proposed Resolution and Schedule amendment.

The USA associated itself with all those speaking in favour of the proposed Schedule amendment and Resolution. It noted that IWC/65/17 (addendum) addressed the issue of commerciality. It also noted that the issue of subsistence need will be addressed by the ASWWG. The IWC uses accepted definitions of 'subsistence use' and 'aboriginal subsistence whaling', which make possible the exchange of currency for whale products under certain conditions.

The Republic of Korea supported the ASW quota in Greenland, noting that the Scientific Committee had concluded it would not be detrimental to the stock.

The Russian Federation indicated its support for the Schedule amendment. However, it felt that the proposals in the Resolution's operative paragraphs (d)i and (d)ii were premature, particularly as the *ad hoc* ASWWG had not yet considered them. It stated that as the pre-ambular text addressed Greenland, it assumed the Resolution dealt with Greenland alone.

Argentina, speaking also on behalf of the Buenos Aires Group[7], reiterated its comments from the ASW Sub-Committee. It considered that since a quota was not agreed for Greenland at IWC/64, all catches made in Greenland since then should be reported as infractions. It also considered that these catches had a strong commercial component. Argentina and the Buenos Aires Group were thus unable to support the proposed Schedule amendment.

Monaco agreed that the proposed catch limits were scientifically sound but was concerned that the proposal was not consistent with those for other ASW regions. It was also concerned over the meaning of 'aboriginal'. It stated that since the Greenland communities take other marine resources such as fish and seals for their subsistence, it believed that their nutritional needs were well covered. Although it agreed that hunting large whales was part of their culture it was not clear how many large whales were needed to meet their cultural needs. Monaco recorded that if the Resolution went to a vote that it would abstain.

Chile, Uruguay and the Dominican Republic associated with the comments made by Argentina and Monaco.

Costa Rica did not support the proposed Schedule amendment, particularly the quota for humpback whales. It expressed concern regarding the use of data on weight of edible products rather than individual whales. It also commented on commerciality. It referred to evidence to suggest that Greenland humpback whales migrate to the Caribbean and that catches there may potentially influence local whale watching activities. It emphasised that it supports trade in general but it does not support commercial whaling, which is prohibited under its national legislation.

Whale and Dolphin Conservation and Animal Welfare Institute (NGOs) commented that a recent academic study suggested that the local need for cetacean meat is approximately 500 tons, which is significantly less than the 799 tons of whale meat proposed by Denmark (Greenland) in IWC/65/17.

[7]The 'Buenos Aires Group' comprises: Argentina, Brazil, Chile, Columbia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay.

Another NGO, the Alaska Eskimo Whaling Commission (AEWC) highlighted the importance of marine mammals, particularly in its case bowhead whales, as a critical food resource in Arctic communities; a single whale can provide 12 to 20 tons of food for remote communities. Subsistence whaling is also an important cultural activity. The AEWC emphasised the importance of the safety of hunters, health of animals, efficiency of the hunt, and minimising suffering. It noted that its hunters have complied with the IWC's requirement to use the penthrite projectile to improve the efficiency of their hunts. However, the high costs of penthrite projectiles are beyond the means of subsistence hunters and it requested IWC members to think about mandates which are not supported by funding. It stressed that the Scientific Committee did not consider their subsistence harvests to be having an adverse effect on the health of whale populations. It urged the IWC to consider the impact that the ASW quota discussions continue to have on aboriginal communities that depend on whales for food.

Denmark clarified that their proposal covers the period 2015-18 and any concerns relating to other years including 2014 should be addressed under the relevant agenda item (Item 18). Regarding any commercial aspects of its whaling, Denmark referred to previous statements and noted that its position had not changed.

4.5.2.3 CONCLUSIONS AND ACTION

4.5.2.3.1 SCHEDULE AMENDMENT

Noting the absence of consensus, the Chair called for two votes in respect of the proposed Schedule amendment and Resolution.

The vote on Schedule Amendment IWC/65/16 describing strike limits for the Greenland hunt 2014-18 (which required a three-quarter majority in support) passed, with 46 votes in favour, 11 votes against and three abstentions[8]. The **adopted** Schedule amendment is given in Annex N[9].

In explaining its 'no' vote Mexico, considered that the numbers exceeded those needed for aboriginal use and suggested commercial use was involved.

In explaining its 'yes' vote, New Zealand explained this had been a difficult decision especially as the previously declined strike limits had been proposed again. Nonetheless it recognised the progress made through the revised needs statement. It had been concerned that if it had abstained, the vote might not have passed; it considered the greater good would be served by Denmark and the rest of the EU working together to address this difficult problem.

In explaining its abstention, Australia stated that it supported ASW when carried out according to IWC rules and commended the efforts of Denmark and the EU, but concerns remained over a lack of clarity on issues of commerciality.

4.5.2.3.2 RESOLUTION

The vote on the Resolution on Aboriginal Subsistence Whaling IWC/65/15 (which required a simple majority to support) passed, with 40 votes in favour, five votes against and 15 abstentions. The **adopted text** is given as Resolution 2014-1 in Annex E.

In explaining its 'yes' vote, Mexico said the Resolution allowed long term consistent work which would assist the process of setting catch quotas in the future.

[8]Voting records are listed in document IWC/65/Status, which is available at *http://iwc.int/iwc65docs.*

[9]Schedule amendments adopted by the Commission are subject to the procedure described at Article V, paragraph 3 of the Convention.

In explaining their 'no' votes, the Russian Federation stressed its view that the Resolution only addressed Greenland, Costa Rica stated that the Resolution did not address its concerns on commercial hunting and the recording of weight of meat rather than number of animals and the use of shared resources, whilst Cambodia stated that they supported sustainable use and believed that everyone should have the right to use whales for food, providing the relevant scientific requirements had been met.

In explaining its abstention, Antigua and Barbuda explained that it had done so as it supported sustainable use and the rights of the ASW communities when the Scientific Committee had provided advice.

5. SANCTUARIES

5.1 South Atlantic Whale Sanctuary

5.1.1 Introduction to the proposal (IWC/65/08)

Brazil introduced its proposal (co-sponsored by Argentina, Brazil, South Africa, Uruguay and Gabon) to establish a South Atlantic Whale Sanctuary through an amendment to the Schedule. Brazil noted that the proposal was refined from its 2012 version to incorporate suggestions made by Contracting Governments, as well as some members of the IWC Scientific Committee and others.

Brazil stated that the primary goal of the Sanctuary was to promote biodiversity, conservation and the non-lethal use of whale resources in the South Atlantic Ocean. It would also maximise the rate of recovery of whale populations within ecologically meaningful boundaries; promote long-term conservation of whales throughout their life cycle and their habitats, with special emphasis on breeding, calving and feeding areas and migratory paths. In addition, it would: stimulate coordinated research; develop the sustainable and non-lethal utilisation of whales for the benefit of coastal communities in the region; provide an overall framework for the development of measures at an ocean basin level; and integrate national research, conservation and management efforts and strategies in a cooperative framework, taking into account the rights and responsibilities of coastal States under the United Nations Convention on the Law of the Sea (UNCLOS). Brazil considered that, as whales are highly migratory animals, a concerted multilateral effort is required to guarantee their conservation and the recovery of their populations. The Sanctuary would result in the creation of an important preserved area in the Southern Hemisphere with three contiguous whale sanctuaries (South Atlantic-Indian Ocean-Antarctica).

Brazil emphasised its commitment to preparing a comprehensive and efficient management plan for the Sanctuary, noting that any such plan would not imply an interference with the sovereign rights of coastal States, but rather represent an opportunity for cooperation. In addition, Brazil stressed that the Sanctuary would have no bearing on matters of food security and it would not threaten the fishing economies of coastal States.

Brazil recalled that the creation of the Sanctuary is proposed within the context of a significant number of international conventions that require the management of activities in the oceans and that oblige States to maintain their biodiversity through conservation and sustainable use. It also noted that the proposal is in full accordance with the provisions of the ICRW, and would thus contribute to the achievement of the Convention's objectives.

5.1.2 Report of the Conservation Committee

This item was first discussed by the Scientific Committee who had reported its discussions and a proposed timetable for its work to review the proposal to the Conservation Committee (Annex G, Item 7.2.2). The Conservation Committee had discussed the proposal given in IWC/65/08 (see Annex G, Item 7.2.3) but made no recommendation. Reference was also made during the Conservation Committee discussions to the Montevideo Declaration (IWC/65/23) and to national initiatives by Uruguay and Mexico to designate their waters as whale sanctuaries.

5.1.3 Commission discussions

Argentina, Australia, Chile, Colombia, Dominican Republic, Ecuador, Gabon, Germany, Italy on behalf of the EU, Mexico, Monaco, New Zealand, Panama, Peru, South Africa, Uruguay and USA expressed their support for the proposal. The NGO, Instituto de Conservación de Ballenas de Argentina (ICBA) also expressed its support.

Brazil and Uruguay drew attention to the Montevideo Declaration through which all signatories indicated their support for the establishment of the South Atlantic Whale Sanctuary. The Declaration had been signed by many coastal States along both the eastern and western shores of the South Atlantic Ocean and called for consistency between the positions taken by States as part of the Declaration and those expressed at the IWC.

In response Côte d'Ivoire stated that the IWC was the appropriate body to deal with the Sanctuary issue, rather than the Montevideo Declaration.

Antigua and Barbuda, Côte d'Ivoire, Grenada, the Republic of Guinea, Iceland, Japan, Norway, the Russian Federation and St Lucia opposed the proposal. An NGO, IWMC World Conservation Trust, also voiced its opposition to the proposal.

Norway, Japan, Iceland and the Russian Federation considered that the proposal should first be reviewed by the Scientific Committee and not discussed at this time. Japan stated that an IWC Sanctuary prohibiting whaling would not address many of the threats that the proposal aimed to deal with (e.g. ship strikes, oil exploration or climate change). It considered that the proposal would go against the Convention's objectives of conservation and sustainable use. It suggested that the countries in the region could instead cooperate through the establishment of a Memorandum of Understanding. Iceland remarked that most of the proponents were from the western side of the south Atlantic and that the consequences for States on the eastern side had not been considered.

Australia recalled that the development of a management plan for the Sanctuary would be the next step and that it would address the multiple threats faced by whales in the South Atlantic. Monaco offered assistance with regard to the development of a management plan for the proposed Sanctuary.

5.1.4 Action

In the absence of consensus, Brazil asked for the proposal to be put to a vote. The proposal (which required a three-quarter majority in support) did not pass, with 40 votes in favour, 18 votes against and two abstentions.

In explaining its 'yes' vote, Denmark suggested that any future proposals should undergo review and recognise food security needs.

In explaining its 'no' vote, the Republic of Guinea stated that the establishment of the Sanctuary was not based upon a recommendation from the Scientific Committee and that the moratorium rendered the Sanctuary unnecessary.

Brazil and Monaco expressed their disappointment at the result. Brazil added that it was nevertheless encouraged as the level of support had continued to rise. Brazil stressed that scientific evidence shows that whale sanctuaries improve the status of marine fisheries and are therefore beneficial in achieving food security goals. Brazil urged the Scientific Committee to complete its review of the Sanctuary proposal.

5.2 Southern Ocean Sanctuary decadal review

5.2.1 Report of the Conservation Committee (Annex G, Item 7.1)

The Scientific Committee had reported its discussions (IWC/65/Rep01 (2014) Item 18.1) to the Conservation Committee. In the Conservation Committee, Australia presented a proposed way forward for the second decadal review (IWC/65/CC05) including draft terms of reference for Conservation Committee and Scientific Committee work with a proposed joint intersessional workshop and draft revised objectives for the Sanctuary (Annex G, Appendices 4 and 5, respectively[10]). Australia also stated that the Conservation Committee should provide advice to the Commission to ensure that a key intent of the review process is to strengthen the conservation objectives of the Sanctuary. All countries who spoke expressed support for this way forward and the Committee proposed that a joint Scientific Committee and Conservation Steering Group be established chaired by the Chair of the Conservation Committee (who would liaise with the Chair of the Scientific Committee) and comprising *inter alia* Australia, France, the UK and the USA.

5.2.2 Commission discussions and action arising

The proposals contained in IWC/65/CC05 were supported by France, Monaco, New Zealand, Sweden, UK and USA.

France expressed its view that the Sanctuary's purpose was to lead to the recovery of cetaceans and to use the area to collect data on recovery. It added that clear-cut objectives for the Sanctuary are important to any assessment process and highlighted the significance and importance of this review.

New Zealand agreed that the original work to refine objectives had not yet been completed and noted that the Scientific Committee had asked for guidance on the Sanctuary review process. It pointed out that both Scientific Committee and the Commission needed to review Sanctuaries and that the Commission needs to articulate a clear set of objectives for the review and for the future work of the Sanctuary.

After discussion, the Chair confirmed that the proposals described in IWC/65/CC05 were **agreed by consensus** and invited Contracting Governments to join the Steering Group.

The Chair of the Scientific Committee drew attention to the Committee's request for clarification on how to involve external scientists when reviewing IWC Sanctuaries. Japan highlighted the value of external reviewers, while Australia stated its view that the involvement of external reviewers in the past was not particularly useful. It suggested that the expertise available from within the current Scientific Committee would be relevant and sufficient.

Following a suggestion by the Chair, the Commission **agreed by consensus** that the Scientific Committee should develop its own procedures for the involvement of external reviewers.

[10]Originally, these were Attachments A and B of IWC/65/CC05.

6. SOCIO-ECONOMIC IMPLICATIONS AND SMALL TYPE WHALING

6.1 Introduction to the Japanese proposal for western North Pacific common minke whales

Japan introduced IWC/65/09 which *inter alia* proposed a Schedule amendment for small-type coastal whaling for common minke whales. Japan stated that it has several traditional coastal whaling communities that are suffering as a result of the moratorium on commercial whaling and it had previously asked for relief quotas for these communities. This new proposal sought a quota of 17 common minke whales from the Okhotsk Sea-West Pacific stock in the coastal waters east of Japan. It highlighted that it had developed the proposed quota in light of the RMP *Implementation Review* completed in 2013 and that it had taken into account many of the concerns previously expressed by the Commission. Japan indicated that the level of harvest is sustainable and noted that its current proposal included provision for monitoring, compliance and surveillance measures. Japan noted that the proposed hunt would take place mostly in coastal waters in Japan's Exclusive Economic Zone (EEZ), in small boats and not on an industrial scale. It emphasised that this hunt is not aboriginal subsistence whaling.

Japan also introduced IWC/65/21 in support of IWC/65/09 which addressed some of the issues of concern raised previously by the Commission, including: (1) the creation of a new 'category' of whaling; (2) the undermining of the moratorium; and (3) an adverse effect on the endangered 'J stock'. Japan drew attention to the debate at the time the moratorium was introduced in which several delegates emphasised that the moratorium did not prohibit whaling but instead set catch limits of zero on all stocks until such time that there was no longer scientific uncertainty on safe limits. Now that the *Implementation Review* has been carried out on this stock, Japan suggested that there is enough scientific certainty to set catch limits for it. It believed that this proposal was consistent with the terms of paragraph 10(e) of the Schedule.

6.1.1 Commission discussions

Antigua and Barbuda, Cambodia, Ghana, Grenada, Republic of Guinea, Iceland, Kiribati, Republic of Korea, St Lucia, and the Russian Federation spoke in support of the proposal.

Antigua and Barbuda believed that the Commission should be more accepting of cultural differences of opinion and recalled the intervention from the Alaska Eskimo Whaling Commission (see Item 4.5) which showed the impact of IWC actions on communities asking for whaling quotas. The Russian Federation highlighted the effort that Japan had made to show complete regulation and transparency of the proposed hunt. The Republic of Korea expressed concern for the Japanese people in the coastal communities who are being denied use of their local resources. It regretted that there had been no review of Schedule paragraph 10(e).

Argentina, Australia, Brazil, Chile, Costa Rica, Ecuador, Italy on behalf of the EU, Mexico, Monaco, New Zealand, Peru, Uruguay and USA spoke against the proposal and voiced their opposition to a return to commercial whaling and lifting the moratorium. Italy also expressed concern over the abundance estimates used in the proposal and the creation a new category of 'small-type' whaling. New Zealand believed that all whaling outside ASW and Special Permit whaling was illegal and that the ICJ supported this view.

Australia expressed concern about the potential impacts on the depleted 'J stock', which is classified as a Protection Stock by the Commission. It was also concerned that the

proposal introduced an *ad hoc* management procedure which would be inconsistent with the Commission's agreed RMP approach. It highlighted the full sequence of events required in the RMP process before a catch limit can be calculated through the RMP, stating that Japan's proposal had met only one (the *Implementation Review*). It noted that that catch numbers taken from the review were for comparing various management options ('variants') tested in the process, and did not represent actual catch limits. The Scientific Committee have not finalised the RMP process (see IWC/65/Rep01 (2013) and (2014), Item 6.1) and Australia emphasised that catch limits cannot be calculated and agreed without further work including agreement on final abundance estimates and any research programmes that might be required to support particular RMP variants.

In response to the above interventions Japan reiterated that paragraph 10(e) would still be in operation, as it had no wish to change or delete this paragraph. It stated that 10(e) allows for catch limits on a stock by stock basis, if supported by science, and commercial whaling could be resumed without changing paragraph 10(e). Japan felt that much of the debate was over the use of language in the ICRW and hoped further dialogue could help resolve these issues. Overall, Japan expressed concern that there appeared to be opposition to commercial whaling as a matter of principle which would be inconsistent with the purpose and objectives of the IWC. Japan asked whether its proposal would achieve consensus if it addressed every concern raised during the debate and conducted a full RMP process.

Japan stated that since the moratorium was put in place, the RMP has been developed, the populations of some whale species have recovered, the importance of diversity has been recognised internationally, and the need for food security has become key. It stressed that the proposed small type coastal whaling would take place within Japan's territorial waters and coastal EEZ, and that the rights of coastal countries are governed through UNCLOS.

6.1.2 Action

Japan asked that, in the absence of consensus, its proposal for a Schedule amendment contained in SC/65/09 be put to a vote. The proposal (which required a three-quarter majority in support) did not pass, with 19 votes in favour, 39 votes against and two abstentions.

Japan explained that it had requested a vote to gain an understanding of which countries were opposed to the proposal and the reasons for their opposition. It intended to contact these Contracting Governments during the intersessional period and proposed the establishment of an intersessional working group on small type coastal whaling, to be chaired by Mr Moronuki, and encouraged members who voted against the proposal to participate. Japan noted that any statements opposing the proposal would be made public in the interest of transparency. Japan remarked that there is strong support in its country for this whaling and announced that it would continue to pursue this issue at future meetings.

There was no further discussion under this Item.

7. RESOLUTIONS

7.1 Proposed Resolution on Highly Migratory Cetaceans (IWC/65/11)

7.1.1 Introduction to the proposal by Monaco

Monaco introduced IWC/65/11, its proposed Resolution on Highly Migratory Cetaceans. It emphasised the large number of cetacean species that are not currently covered by IWC management measures. It also noted that cetaceans are not covered comprehensively by any other agency. Unintentional mortality due to entanglement, ship strikes and other causes is becoming increasingly important and Monaco suggested that a large proportion of the species dealt with by the IWC are highly migratory. It urged that the IWC should continue to be a key player in their future monitoring, especially since it has access to the best data and scientists in this field. It drew attention to the threats faced by many cetaceans and highlighted the need for cooperation with other organisations.

7.1.2 Discussion

Australia expressed support for the draft Resolution and drew attention to IWC/65/OS CMS/ASCOBANS/ACCOBAMS which made proposals relevant to operative paragraphs within the proposed Resolution. Argentina, Brazil, Chile, Dominican Republic, Italy on behalf of the EU, Mexico, New Zealand, Peru, Uruguay and USA indicated their support for the draft Resolution.

Italy on behalf of the EU considered the IWC to be the appropriate forum for discussions on the conservation of all cetacean species. It welcomed the ongoing work of the Conservation Committee and in particular the excellent progress on entanglement and the Strategic Plan for Whalewatching as well as recent Workshops on marine debris and ship strikes. It said that strengthening the co-operation with other global and regional organisations will improve the governance of the IWC and help streamline international policy development.

The USA noted that many species range between the EEZs of non-Contracting Governments and therefore require extra protection which can be established through IWC co-operation with other organisations.

Norway, supported by Japan and the Republic of Korea, considered that many cetaceans are not highly migratory and thus are not critically dependent on international cooperation for their conservation and management. In its view, most of the threats cetaceans face such as pollution, marine debris and ship strikes occur in waters under national jurisdiction. Additionally, many populations of small whales are already covered by national or regional regimes such as NAMMCO and ASCOBANS in the northern Atlantic and ACCOBAMS in the Mediterranean and the Black Sea. Norway did not consider it a priority task for the IWC to act as initiator and/or coordinator of international research efforts for the conservation of small cetaceans.

Japan believed that small cetaceans were outside of the competence of IWC. It noted that Articles 65 and 120 of the UNCLOS were referred to in the draft Resolution but commented that Article 64, which refers to regional management of fishing issues, is more important in this context. Japan was strongly in favour of regional management in these cases and therefore could not support the draft Resolution.

Iceland did not support the proposed Resolution but noted its willingness to cooperate in international conservation efforts, for example regarding North Atlantic fishing stocks. However in Iceland's view it would be impractical to extend the IWC's remit to other cetacean species. The Republic of Korea referred to a series of conservation and management measures adopted through the Western and Central Pacific Fisheries Commission (WCPFC) and the Indian Ocean Tuna Commission (IOTC), both of which deal with issues including conservation and bycatch of cetaceans.

Responding to the points raised during the discussion, Monaco stressed that the draft Resolution did not take a position on whether the species concerned were within

the remit of IWC. It considered that most cetaceans are indeed highly migratory, and noted that most species are not confined to a single area of national jurisdiction. Monaco believed that UNCLOS Article 64 was concerned with fishing and mainly with fish species, whereas Article 65 was exclusively concerned with marine mammals. The point was not whether IWC should deal with all cetaceans but rather that IWC should not be excluded from discussion of these issues at other fora.

Monaco clarified that the draft Resolution referred to collaboration with other relevant organisations and suggested that these included the Convention on Migratory Species (CMS), regional fisheries management organisations (RFMOs), International Maritime Organization (IMO), and UN Law of the Sea Convention (UNCLOS).

7.1.3 Action

Monaco thanked all who supported the draft and, noting the absence of consensus, asked to proceed to a vote. The vote on the Resolution in IWC/65/15 (which required a simple majority in support) passed, with 37 votes in favour, 15 votes against and 7 abstentions. The **adopted text** is given as Resolution 2014-2 in Annex E.

In explaining its 'yes' vote, Switzerland noted that it always favoured extra protection for small cetaceans but it also noted that many critically endangered species were not highly migratory, or even migratory, and were confined to the waters of one or two countries.

In explaining its abstention, Colombia noted that although it agreed with the draft Resolution, it had to abstain because it was not a Party to the UN Law of the Sea Convention.

7.2 Proposed Resolution on Food Security

7.2.1 Introduction to the proposal

Ghana presented the proposed Resolution on Food Security (IWC/65/10rev4) submitted by Ghana, Côte d'Ivoire, Mali, Republic of Guinea and Benin. It explained that wide consultations had been held and noted that the Resolution had been endorsed by Le Comité Maritime de la Façade Atlantique (COMAFAT).

7.2.2 Discussion

During the discussion, all Contracting Governments who spoke recognised the great importance of food security but had differing views on how or if this should be directly addressed by the IWC.

Antigua and Barbuda, Cambodia, Côte d'Ivoire, Grenada, Republic of Guinea, Norway, Russian Federation, and St Kitts and Nevis supported the proposed Resolution. Antigua and Barbuda stressed the need to ensure the sustainable livelihoods of coastal peoples who are entitled to share the benefits of the natural resources provided by whales. Norway noted that food security is a key international development goal and considered it to be illogical to ignore marine mammals as a food source. In speaking in favour, the Russian Federation noted that the marine mammal hunters of Chukotka support the Resolution. Côte d'Ivoire called on the IWC to address key issues facing the world, not just conservation.

The USA, supported by Italy on behalf of the EU, considered food security to be an important issue but believed it was relevant to the IWC in the aboriginal whaling context only. The USA proposed moving the first operative paragraph to the end and replacing the first word 'affirms' with 'recalls'.

Italy on behalf of the EU, Costa Rica, Dominican Republic and Monaco considered FAO rather than IWC to be the appropriate forum for discussions on food security. Monaco referred to the escalating problem of cetacean meat contaminated with mercury and other pollutants. It disagreed that the primary purpose of whaling is for food, referring to Japan's special permit whaling and Iceland's commercial whaling. The Dominican Republic suggested whales do not provide a viable way to strengthen food security given their slow reproduction. Italy, on behalf of the EU, regretted that there had been insufficient time for discussions to enable consensus to be reached and did not believe that the draft Resolution was intended to undermine the moratorium but thought that the second and third paragraphs could be considered to do this. Future amendments should reflect the conclusions of the Rio+20 summit more fully given its emphasis on sustainable use of oceans and seas.

Gabon did not believe that whales contribute in a meaningful way to global food security, but recognised that it is relevant for some traditional communities. It considered that a declaration of solidarity with aboriginal communities who depend upon whales for food security and cultural identity is laudable and proposed that the Resolution be more targeted to these special cases. It considered development of sustainable fisheries and protection of the natural environment to be complementary. It noted the importance of marine protected areas as a key component of successful fisheries management and that the important ecological role played by whales in marine ecosystems can increase fisheries production; thus whale conservation can contribute directly to food security.

7.2.3 Action

Ghana thanked all who had provided their views. They did not call for a vote but stated that they would continue discussion intersessionally with a view to presenting a revised text to IWC/66 in 2016.

7.3 Proposed Resolution on Civil Society Participation and Transparency at the IWC

7.3.1 Introduction to the proposal

Chile presented IWC/65/12rev1, a proposal to increase civil society participation and improve transparency in the IWC submitted by Chile, Argentina, Brazil, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay. Chile stressed that civil society could provide useful contributions to IWC discussions and outlined proposed changes to the Commission's Rules of Procedure and Rules of Debate and the Rules of Procedure of the Scientific Committee. Chile noted that the proposed Resolution had been amended to take account of suggestions made during the Finance and Administration Committee (see Annex K [originally IWC/65/Rep02] Item 4.5).

7.3.2 Discussion

Japan and the USA thanked the proponents for taking into account their previous comments.

Japan, supported by Iceland, was not opposed to non-Bureau members observing the Bureau, but noted that much of the Bureau's work was undertaken by email or teleconference and therefore it would be difficult to include observers from a practical point of view. It also believed that the elements of the Resolution relating to the Scientific Committee should be referred to the Scientific Committee before adoption by the IWC, a view shared by Norway. Japan requested that Observers be handed a copy of the Code of Conduct when they are attending meetings to remind them of the rules for participation in Commission discussions.

The USA, New Zealand and South Africa supported participation by civil society in IWC proceedings and improved transparency in the Commission's processes. However, the USA did not support the Resolution as written since it would open the Bureau for observation by all Contracting Governments. It noted that the current composition of the Bureau worked well, with a small number of Contracting Governments representing a range of views and interests. In addition, the Bureau does not deal with substantive matters, and a report of each meeting is posted on the IWC website, giving sufficient transparency for such a body. If, in the future, the Bureau's mandate is revised such that it becomes a substantive body, then, at that time, the Commission may choose to alter the Bureau's make up and meeting arrangements. Therefore, the USA recommended removal of the proposed sentence regarding observation by Contracting Governments in meetings of the Bureau.

Italy, on behalf of the EU, welcomed efforts to improve transparency and supported NGO participation. It indicated their readiness to work on the Resolution in order to move towards consensus.

7.3.3 Action

Following discussions outside the meeting and the circulation of three further revised versions, Chile presented IWC/65/12rev4 and requested that it be adopted by consensus.

IWC/65/12rev4 was **adopted by consensus** as Resolution 2014-3 (see Annex E).

7.4 Proposed Resolution on the Scientific Committee

7.4.1 Introduction to the proposal

Chile presented IWC/65/13rev1, a proposed Resolution on the Scientific Committee submitted by Chile, Argentina, Brazil, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay. Chile noted that the proposed Resolution aims to establish a working group between the Conservation Committee and the Scientific Committee, secure steady funding for the work on small cetaceans and establish priorities for the work of the Scientific Committee. Chile clarified that the intention was that, once the Resolution has been adopted, the SC could provide additional suggestions at IWC/66.

7.4.2 Discussion

In response to a query by Antigua and Barbuda, Chile said that the proposal for a working group stems from the discussions at the F&A Committee in order to help better organise the work of the Scientific Committee around its priorities.

Australia expressed support for the proposal, noting the need to prioritise the work of the Scientific Committee and to improve efficiency. It suggested that the existing Operational Effectiveness Working Group, assisted by members of Scientific Committee, should provide advice to the Scientific Committee on Commission priorities and help identify the allocation of those priorities during the two year Commission cycle. The Working Group's advice will also assist the Scientific Committee in developing its recommendations on research funding and other budget proposals

Italy, on behalf of the EU, indicated their support for increasing the transparency of the Scientific Committee.

Japan, supported by Norway, stated that the Resolution should be referred to the Scientific Committee before adoption by the IWC, particularly as it involves the day-to-day work of that Committee.

Following discussions outside the meeting which included the circulation of three further revised versions of the text, Chile presented IWC/65/13rev4 and requested that it be adopted by consensus.

Iceland, supported by Antigua and Barbuda, Japan, Republic of Guinea, Russian Federation, Norway, St Lucia, and St Vincent and The Grenadines, stressed that, while it would not block consensus, it did not recognise the authority of the IWC with respect to the management of small cetaceans. Iceland noted its view that small cetaceans are under the competency of NAMMCO. The Russian Federation stated that it will not submit information on small cetaceans to the IWC.

Iceland also stated its understanding that the Resolution would not affect the level of resources available for the RMP.

7.4.3 Action

IWC/65/13rev4 was **adopted by consensus** as Resolution 2014-4 (see Annex E).

7.5 Proposed Resolution on Whaling under Special Permit[11]

7.5.1 Introduction to the proposal

New Zealand introduced IWC/65/14 and highlighted the conclusion of the International Court of Justice (ICJ) (see IWC/65/20rev1) that special permits granted by Japan in connection with JARPA II were not for the purposes of scientific research. New Zealand noted the Court's Judgement that the permits were in breach of certain provisions of the Convention, including in relation to the commercial whaling moratorium. Accordingly the Court ruled that the issuance of such permits must cease. New Zealand considered that, while the decision is only binding to the parties to the case, i.e. Australia, Japan and New Zealand, all members of the IWC must pay close attention to the ruling and consider its wider implications.

New Zealand clarified that the proposed Resolution was intended to ensure that the implications of the ICJ ruling are fully taken into consideration during future whaling discussions. New Zealand stressed that it is not in favour of any whaling taking place and that its intention is not to legitimise future whaling, but to avoid returning to 'business as usual' in relation to scientific whaling. New Zealand explained that the proposed Resolution would instruct the Scientific Committee to consider its criteria for the review of Special Permit research programmes in the light of the conclusions of the Court's judgement. The proposed Resolution requested that no further special permits for the take of whales should be issued until they have been reviewed by the Scientific Committee, and until the Commission has made recommendations on the basis of this advice.

7.5.2 Discussion

Norway stated that the proposal submitted by New Zealand could jeopardise future scientific research. In particular, Norway considered that lethally obtained data could answer many questions not necessarily related to the conservation of whales, and that expanding the review of research programmes could not be justified.

Japan stated that it recognised, and abided by, the decision of the ICJ. They noted, however, that the decision relates to the particular case of JARPA II and that it does not change the legal framework of the IWC. Japan noted that, if the Resolution is based on the ICJ judgement, it should refer to it specifically. Japan further remarked that the changes

[11]Important aspects of this topic are also discussed under Item 15.

suggested would require amendments to Article VIII of the Convention or paragraph 30 of the Schedule and that a Resolution would therefore not be appropriate. Despite its reservations, Japan indicated willingness to engage in discussions.

New Zealand suggested that referring to the ICJ case in particular would not be appropriate, as the intention was to move from the specific case to a more general application.

Chile, supported by Uruguay, stated that the Buenos Aires Group did not support whaling for scientific purposes, and suggested amendments to the Resolution so that special permits cannot be issued unilaterally.

Australia, Mexico, Italy on behalf of the EU, Monaco and USA indicated their support for the Resolution. Italy, on behalf of the EU stated that the principles and conclusions of the ICJ judgement should be fully incorporated into the working practices of the IWC and that this should include appropriate revisions to the Annex P process[12].

Following discussions outside the meeting, New Zealand thanked all delegations for their constructive engagement. It noted that the reference to sanctuaries in a preambular paragraph had been particularly contentious and regretted that it had not been possible to reach consensus. It had produced a revised document (IWC/65/14rev1) which took account of several of the views presented.

Japan, supported by Iceland, said that it could not support the proposal as it narrowed the scope of Article VIII of the Convention and paragraph 30 of the Schedule. Japan also disagreed with the interpretation of the ICJ judgement implied by the proposal. Iceland stressed that interpretation of Article VIII should be based on science and not be influenced by politics. Antigua and Barbuda explained that it could not support the proposal as there had not been sufficient compromise.

Norway noted particular concern with regard to the restriction derived from operative paragraph 1(b) of the proposed Resolution, as it went beyond the ICJ judgement. In response, New Zealand stated that paragraph 1(b) is a development from the Court's decision but that it believed it to be useful to guide the future work of the Commission.

7.5.3 Action

In the absence of consensus, proposed Resolution IWC/65/14rev1 (which required a simple majority in support) was put to a vote and passed, with 35 votes in favour, 20 against and five abstentions. The **adopted text** is given as Resolution 2014-5 in Annex E.

Japan announced that it would be submitting a new research plan for the Antarctic Ocean and that activities in line with the ICJ judgement would start in the austral summer of 2015/16.

Australia noted that the Resolution incorporated the main elements of the ICJ judgement and that it was not intended to be against scientific whaling but to apply the law. Australia underscored that some elements in the text had been incorporated to address Japan's concerns and hoped that proponents of future whaling programmes would follow the Resolution. Recalling that an expert panel was likely to convene in January or February 2015, Australia, supported by Mexico, suggested that the Commission's Chair should provide the expert panel with, and request it to consider, the Resolution. This suggestion was **noted**.

Antigua and Barbuda cautioned against using resolutions, especially those adopted without consensus, to guide the policies of IWC and suggested that further discussion should occur before this Resolution becomes an operational element of the work of the Commission. In response, New Zealand stated that the Scientific Committee, as a subsidiary body of the IWC, must comply with the Resolution.

Argentina, supported by Brazil, Costa Rica, Dominican Republic, Ecuador, Gabon, Mexico, Panama, Peru and Uruguay, stressed the importance of respecting the moratorium and whale sanctuaries and condemned the use of lethal whale research methods.

In explaining its 'no' vote, Colombia stated that generalising the conclusions of the specific ICJ judgement may worsen the problem identified.

Costa Rica explained that it had abstained because the operative paragraphs did not include important elements in relation to sanctuaries, non-lethal research methods, the moratorium or special permits.

The Republic of Korea and Italy on behalf of the EU expressed regret that consensus could not be reached. Italy hoped that the Resolution will assist the Commission with its future work.

Uruguay expressed concern about the lack of legal advice available to the Commission, and the associated risk of misinterpreting legal information.

8. THE IWC IN THE FUTURE

There were no discussions under this agenda item.

9. WHALE STOCKS

The Chair thanked the Scientific Committee for its extensive and ongoing work on whale stocks as described in its two reports (IWC/65/Rep 01 (2013) and (2014)) and summarised in IWC/65/24. Some aspects of its work were presented to the Conservation Committee (see Item 10).

10. CONSERVATION COMMITTEE

The Conservation Committee met on 12 September 2014 and its report (originally IWC/65/Rep05rev2) is given as Annex G. The Chair of that sub-committee (Bruno Mainini, Switzerland) summarised its findings to the Plenary session (below).

10.1 Investigation of inedible ('stinky') gray whales

10.1.1 Reports of Committees

The Conservation Committee discussed this matter under Item 3 of its report (see Annex G) and had **recommended** moving it to the Scientific Committee agenda. The Aboriginal Subsistence Whaling Sub-Committee had discussed it under its Item 5.2 (see Annex F) and there was considerable discussion of this issue with respect to management in the report of the ASWWG (see Annex F, Appendix 4).

10.1.2 Commission discussions and action arising

Japan commented that the approach presently used for reporting and taking into account 'stinky' whales was not sufficient and that the management component of the issue should be presented as specific queries for the Scientific Committee to address within the *Gray Whale SLA* framework. It suggested a number of possible queries including: how would the addition of <10 animals a year to the quota impact the conservation status; what would be the impact if a 10% allowance level for 'stinky' whales is established; and what would happen to the conservation status of gray whales if any unused quota is carried over to the next year's catch limits?

[12]Latest text of the Annex P process published in: *J. Cetacean Res. Manage. (Suppl.)* 16: 349-353.

The Russian Federation stressed that the 'stinky' whale estimate of 10% mentioned during various Committee discussions cannot be considered complete since the data refer only to caught animals and go back to the early 2000s; there are no current data for the proportions of living stinky whales in the population. All 'stinky' whale data available are reported to the IWC and in recent years samples have been available for laboratories all over the world to request. The Chukotka hunters' observations indicate the number of 'stinky' whales is not constant and varies by area and time; the 'stinky' problem also occurs in walruses and some fish species. Determining the cause is difficult since samples degrade when frozen and problems occur when transporting samples from Chukotka to Moscow for analysis. Quantification is also difficult since meat may be stored until winter, and the issue only discovered when the meat is cooked. The Russian Federation stressed that it was important that 'stinky' whales are not included in the catch quota, but should be recorded as struck and lost. The Russian Federation, supported by Japan, urged the Scientific Committee to work on this issue.

The UK agreed that current data are needed on 'stinky' whales both encountered at sea and landed. Australia supported Japan and the UK and suggested that the Scientific Committee could develop recommendations on how to understand the implications of any management decisions regarding 'stinky' whales.

Denmark supported the statement by the Russian Federation and noted that whales or other biomass may be inedible for other reasons; all causes should be considered when agreeing how to classify these whales for reporting purposes.

The Chair of the ASWWG recalled his group's suggestions on how the Scientific Committee might address the problem of accounting for 'stinky' whales, for example through a fixed number of animals, a fixed percentage of the total catch limit, and possibly with a carry-forward provision. He also noted that if the Commission was to proceed with this issue it will need to develop a proposal for how it would like the Scientific Committee to proceed.

The Chair of the Scientific Committee confirmed that there were sufficient data to proceed with an assessment of the effect on stocks of different management options associated with the treatment of such whales within the strike limits and that item could be added to the Committee's agenda.

Austria noted that this is an important issue that needs to be resolved and was pleased that all Contracting Governments agreed that progress would be achieved by working through the Scientific Committee. It considered that the cause of the problem needs to be established; that agreement was needed on how to categorise these whales (since in its view 'struck and lost' is unlikely to be the best option), and that there should be a cap on whales in this category in the framework of a quota.

The Commission **recommended** that the issue of 'stinky' whales should be moved to the Scientific Committee's agenda from that of the Conservation Committee.

10.2 Ship strikes

10.2.1 Report of the Conservation Committee

This item was first discussed by the Scientific Committee who had reported its discussions (IWC/65/Rep01, Items 7.4 in 2013 and 7.2 in 2014) to the Conservation Committee. The Scientific Committee had made a number of recommendations. Those most directly relevant to the Commission concerned: continuation of the co-ordinators' role; improved reporting especially by member governments; work on the use of AIS (automatic identification system) shipping data; conservation action for the small (<100) Magellan Straits humpback whale and blue whale populations off Sri Lanka; continued co-operation with ACCOBAMS; and extension of the seasonal management area approach for North Atlantic right whales.

The Conservation Committee discussions can be found under Annex G, Item 4. In addition to **endorsing** the recommendations from the Scientific Committee, the Conservation Committee **endorsed** the recommendations from the Workshop on ship strikes held in Panama (IWC/65/CCRep01[13]) in conjunction with UNEP-CEP-SPAW. An important conclusion is that the most effective mitigation measure is to separate whales and ships, but when this is not possible the only proven effective measure to reduce lethal strikes is to reduce vessel speed; this has implications for intensified collaboration between the IWC and the IMO.

The Conservation Committee also received a report and work plan (IWC/65/CCRep07) from its Ship Strikes Working Group (SSWG) chaired by Belgium, noting that work would continue until IWC/66. Belgium noted that the recommendations from the Panama Workshop on ship strikes would help guide the SSWG's future actions. Sri Lanka had intended to attend the Panama Workshop but had been unable to do so due to visa problems. Countries were making good use of the ship strikes database and Belgium thanked them for contributing data. Belgium will support a ship strikes Workshop in Colombia later in 2014 and welcomed Denmark to the SSWG.

10.2.2 Commission discussions and action arising

Belgium congratulated the Scientific and Conservation Committees on their work on ship strikes, and was pleased that the Conservation Committee had endorsed the 2014 Workshop recommendations (see IWC/65/CCRep01). The Workshop, which included participants from the shipping industry, illustrated the increasing international importance of this issue. Many scientific studies and NGO programmes were now being implemented around the world. While this increased effort is an IWC success story, much needs to be done since there are no technological solutions yet. It concurred with the Conservation Committee that apart from separation the only effective mitigation method is to reduce vessel speed. Finally, it stressed that reporting ship strikes is paramount and encouraged all nations to publicise and make use of the IWC ship strike database.

Germany supported Belgium, noting that ship strikes are an important issue and welcomed the unique database. It drew attention to stranding schemes, and noted that many ship strikes of small cetaceans remain undetected.

Panama reported that, in cooperation with the Smithsonian Research Institute, it had studied the problem of ship strikes and had developed an initiative to separate lanes of shipping traffic. The IMO has approved three lanes in the Pacific and one in the Caribbean, due to be implemented from 1 December 2014. Argentina noted that since 2009 there has been a navigation corridor for vessels in operation at Golfo Nuevo, Chubut at the southern right whales nursery ground from June to November.

[13]Published in this volume.

10.3 Southern right whales of Chile-Peru

10.3.1 Report of the Conservation Committee

The item was first discussed by the Scientific Committee who had reported its discussions (IWC/65/Rep01, Item 10.6 in 2013 and 10.7 in 2014) to the Conservation Committee. The Scientific Committee had expressed concern and the need for action regarding information on a wind farm project near an important habitat near Isla de Chiloe. The Conservation Committee **endorsed** the work of the Scientific Committee and its discussions can be found under Item 5 of its report (Annex G).

10.3.2 Commission discussions and action arising

Chile noted the work undertaken to facilitate the recovery of this endangered population stock (see also Item 11.3) and drew attention to the Scientific Committee's report showing new information on the southernmost sighting of a mother and calf and documentation of reproductive behaviour near Isla del Chiloe.

10.4 National Reports on Cetacean Conservation

10.4.1 Report of the Conservation Committee

The Conservation Committee discussions on this topic can be found under Item 5 of its report (Annex G). The Chair thanked the eight countries that had submitted reports to IWC/65[14], noting they contributed useful information to the meeting.

10.5 Marine debris

10.5.1 Report of the Conservation Committee

The item was first discussed by the Scientific Committee who had reported its discussions (IWC/65/Rep01, Item 7.5 in 2013 and 7.3 and 12.6 in 2014) and recommendations, including those from a first Workshop (SC/65a/Rep06[15]) to the Conservation Committee.

The Conservation Committee endorsed the work of the Scientific Committee and its discussions can be found under Item 9 of its report (Annex G). Focus was on the report of the second marine debris Workshop (IWC/65/CCRep04[16]) and the Committee endorsed the recommendations from the Workshop and in particular that: (1) the IWC and its Secretariat work together with the Secretariats of the other major IGOS and RMFOs relevant to this issue; (2) the IWC Scientific Committee should explore ways of combining estimates of oceanic debris and information on cetaceans to identify priorities for mitigating and managing the impacts of marine debris on cetaceans; and (3) a planned IWC Workshop (anticipated March-April 2016) be held on prevention of the incidental capture of cetaceans.

The Conservation Committee also recommended that: the marine debris issue should be made a standing agenda item of the Scientific Committee; and that the potential for a CMP for marine debris should be explored.

10.5.2 Commission discussions and action arising

Ecuador thanked the IWC, in particular David Mattila, for running a course on disentanglement of cetaceans (including ghost fishing gear which is an important component of marine debris) in 2013. The course had been attended by staff from the Ministry of Environment in Ecuador as well as delegates from Chile, Colombia, Panama and Peru.

[14]Argentina (IWC/65/CC11), Australia (IWC/65/CC04), Chile (IWC/65/CC09), France (IWC/65/CC08), Mexico (IWC/65/CC10), New Zealand (IWC/65/CC06), UK (IWC/65/CC07) and the USA (IWC/65/CC03).
[15]*Published as:* IWC. 2014. Report of the IWC Scientific Committee Workshop on Marine Debris, 13-17 May 2013, Woods Hole, USA. *J. Cetacean Res. Manage. (Suppl.)* 15:519-41.
[16]Published in this volume.

11. CONSERVATION MANAGEMENT PLANS (CMPS)

The Scientific Committee first discussed this issue (IWC/65/Rep01, Item 21 in both 2013 and 2014) and presented its results to the Conservation Committee. Conservation Committee discussions can be found under Item 8 of Annex G. The Chair of the Conservation Committee presented its discussions to the Plenary and thanked Australia for its contribution to the development of CMPs and for chairing the CMP Standing Working Group.

11.1 Western Pacific gray whale

11.1.1 Report of the Conservation Committee

The Conservation Committee discussions can be found under Item 8.1 of Annex G including consideration of the report of the Scientific Committee which had *inter alia* supported the work of the IUCN Western North Pacific Gray Whale Advisory Panel, expressed concern over trap net fishing off Sakhalin Island near the nursery/feeding grounds and concern over a proposed development project in the Sakhalin area, urged the Russian Federation to ensure the maintenance of Piltun Lagoon and recommended a rigorous environmental impact process for oil and gas activities near gray whale feeding habitat.

11.1.2 Commission discussions and action arising

The Russian Federation noted that a CMP for gray whales had been prepared by the IUCN and approved by the IWC. The Russian Federation had worked on a Memorandum of Cooperation for range states relating to the implementation of the management plan, and anticipated that it would be signed by some range states during the current IWC meeting[17].

11.2 Southwest Atlantic southern right whale

11.2.1 Report of the Conservation Committee

The Conservation Committee discussions can be found under Item 8.2 of Annex G including consideration of the report of the Scientific Committee. It had *inter alia* expressed concern and the need for action with respect to the ongoing large annual mortality of calves at Península Valdés in Argentina and supported ongoing efforts including the work of the CMP co-ordinator.

11.3 Southeast Pacific southern right whale

11.3.1 Report of the Conservation Committee

The Conservation Committee discussions can be found under Item 8.3 of Annex G as well as under Item 10.3 above, including consideration of the report of the Scientific Committee. In addition to the concern over the proposed wind farm development, the Conservation Committee welcomed news of maximum protection to whales when a sighting is recorded.

11.4 Additional CMP proposals and strategic planning

11.4.1 Report of the Conservation Committee

The Conservation Committee discussions can be found under Items 8.4 and 8.5 of Annex G including consideration of the report of the Scientific Committee. It had *inter alia* provided a list of potential candidates for CMPs in response to the Commission's request made at IWC/64 in 2012 (see IWC/65/Rep01 (2013), Item 21) and consideration of relevant parts of the Conservation Committee's Standing Working Group (IWC/65/CCRep03).

[17]The Memorandum of Co-operation was signed by the Russian Federation, Japan and USA later in the meeting.

11.5 Progress Report by the CMP Standing Working Group

11.5.1 Report of the Conservation Committee

The report of the CMP Standing Working Group (including a workplan) is given as IWC/65/CCRep03 and was presented to the Conservation Committee. It made a wide range of recommendations including revised Terms of Reference and work plan, incorporation of marine debris into existing and new CMPs, increased collaboration with relevant IGOs, investigation of CMPs for small cetaceans and assistance with ongoing work in the Indian Ocean and Oceania. The Conservation Committee discussions can be found under Item 8.4 of Annex G.

11.6 Commission discussions and action arising

Italy, on behalf of the EU, proposed that all of the recommendations relating to CMPs made by the Scientific Committee and Conservation Committee should be adopted. These recommendations were **endorsed** by the Commission (see Item 24).

12. WHALEWATCHING

12.1 Report of the Conservation Committee

The Conservation Committee discussions can be found under Item 6 of Annex G including consideration of the report of the Scientific Committee (IWC/65/Rep01, Item 15 in 2013 and 2014) which had *inter alia* expressed concern over feeding the boto in Brazil; the poor management of whalewatching on the small resident bottlenose dolphin population in Bocas del Toro, Panama; the need for a better mechanism to alert the IWC and Governments over concerns; and reiteration of principles regarding swim-with programmes. The Conservation Committee also received the report of its Standing Working Group on Whalewatching which *inter alia* had urged additional consideration of the recommendations from the Brisbane whalewatching operators' Workshop (IWC/65/CCRep02[18]); the hosting of a joint Workshop with the Scientific Committee to complete the outline of the handbook; and completion of the capacity building survey and development of suggestions for a suitable pilot area.

12.2 Commission discussions and action arising

Argentina, supported by Colombia, Ecuador and the USA, stressed the importance of whalewatching to local regions and the many benefits to coastal communities and to conservation. Ecuador noted that it had already implemented regulations on sustainable whalewatching. Colombia noted that it is developing several instruments relating to cetacean management; it is currently consulting civil society about a whalewatching manual; is in the process of adopting a marine management plan; and is organising two workshops, including one on entanglement.

Discussion of the adoption of the Report of the Conservation Committee is given under Item 24.5.

13. WHALE KILLING METHODS AND ASSOCIATED WELFARE ISSUES

The Working Group on Whale Killing Methods and Associated Welfare Issues (WG on WKM&AWI) met on 11 September 2014 and its report, originally IWC/65/Rep06, is provided as Annex H. The Chair of tthe Working Group (Michael Stachowitsch, Austria) summarised its findings to the Plenary Session (below).

[18]Published in this volume.

13.1 Data provided on whales killed

Data on whales euthanised or killed was provided by New Zealand, USA, Denmark (Greenland), the Russian Federation, St Vincent and The Grenadines and Norway (see Annex H, Item 3). The Working Group thanked these Governments for submitting their data and urged others to do the same.

13.2 Improving the humaneness of whaling operations

Norway and USA submitted reports (see Annex H, Item 4). The Working Group thanked NAMMCO for its presentation on their 'Manual for the Instruction on the Maintenance and use of Weaponry and Equipment Deployed in the Hunting of Baleen Whales' that focussed on safety for hunters and rapid death for the target species of the hunts. The report can be found on the NAMMCO website[19].

13.3 Welfare issues associated with the entanglement of large whales

Entanglement and marine debris are critical welfare as well as conservation issues and the IWC has begun to make good progress on them (see Annex H, Item 5). The Working Group thanked the Secretariat for its report on progress, especially with respect to matters related to entanglements, including training workshops and capacity building, the development of a global database and convening future workshops. It recommended that this work continue, including funding the post of technical advisor to the Secretariat, held by David Mattila.

13.4 Whale welfare

13.4.1 Report of the Workshop on Euthanasia Protocols

The Working Group received the report of this Workshop (IWC/65/WKM&AW1Rep01[20]) co-hosted by the UK and Norway. It was highlighted as a good example of collaboration within the Commission. The Workshop stressed that human safety was of paramount importance and that euthanasia should only be attempted by trained personnel. It made a series of specific and practical recommendations on euthanasia protocols and related matters. The Scientific Committee and the WG on WKM&AWI endorsed the recommendations from this Workshop.

13.4.2 Progress update from the Intersessional Working Group on Welfare

13.4.2.1 REPORT OF THE WORKING GROUP

The Working Group received the report and recommendations of the Intersessional Working Group on Welfare (IWC/65/WKM& AWI05) that consisted of Argentina, Luxembourg, New Zealand, the UK and the USA.

The UK stressed that the recommendations were not intended to change the Working Group's existing work relating to hunting and welfare, and noted the progress made in delivering the 2003 Action Plan. Instead the purpose of the proposals was to formally recognise and embed the wider range of welfare considerations already being considered within the IWC into a single place.

The report's recommendations were discussed extensively at the meeting by the WG on WKM&AWI (see Annex H, Item 6) but no consensus could be reached on adoption of the proposals in the original document.

[19]*http://www.nammco.no*.
[20]Published in this volume.

13.4.2.2 COMMISSION DISCUSSIONS

Italy, on behalf of the EU, believed the IWC had a clear role to play in welfare issues and welcomed the outcomes of the recent workshops and the endorsement of their recommendations by the Scientific Committee.

The UK recalled that at IWC/64, the Commission had endorsed the Intersessional Working Group on Welfare and its mandate to review the Terms of Reference of the WG on WKM&AWI and its action plan. It believed welfare to be an important issue which is entwined with other IWC interests and that, at present, the discussions of welfare issues at the Commission were *ad hoc*. The UK believed that the IWC should follow a comprehensive approach. It had thus produced a revised version of the recommendations (IWC/65/WKM&AWI05rev1) since the close of the Working Group that had tried to accommodate the concerns expressed within the Working Group discussions, with respect to names, definitions of certain terms and the action plan. The UK emphasised that this work was not intended to be controversial. It hoped that discussions could continue to enable it to solve any further outstanding issues.

Argentina, Australia Germany, Ireland and the USA associated themselves with the comments made by the UK and Italy on behalf of the EU.

Germany thanked the Chair of the WG on WKM&AWI for the excellent report and the UK for chairing the Intersessional Working Group on Welfare and for the work done by this group. It was disappointed that incomplete data on killing methods had been provided, including on whether and how often a secondary killing method was used, and the average and maximum time to death (TTD) recorded in each hunt. This made it impossible to independently assess any progress, or areas for specific concern within the hunts. Germany expressed interest in further data from fin whale hunts, as these are the largest whales currently hunted and are killed using a specific explosive harpoon. It would have liked to know in how many cases a secondary harpoon, or other secondary killing method had been required to kill these large whales. Furthermore, it would be grateful for data on minke whale hunts, and suggested that hunts on large species such as sei and sperm whales could be reported to the IWC.

Iceland stated that it had an ongoing study on its fin whale hunt, and would send the results of this scientific research to next year's NAMMCO Scientific Meeting.

The USA thanked the UK for taking the lead on the Intersessional Working Group on Welfare upon which it had served. It looked forward to working on these issues in the coming years. It supported the recommendation to broaden the IWC's consideration of welfare beyond that solely related to direct harvest, including efforts to consider welfare concerns from indirect human impacts. However, it also reiterated that the group needed to consider hunting activities separately or, alternatively, to include the correct experts when speaking to hunting issues. This was because the welfare-related objective of hunting (a quick death) and the objectives of other welfare issues (to avoid injury/death) differ, and the expertise required to speak to it differs.

Argentina said that welfare issues are important to all members of the Buenos Aires Group and it would continue to participate actively. It accepted all of the recommendations.

Norway stated that it could not support the proposed substantial extension of the Terms of Reference and the scope of work although it appreciated that the UK had removed some of the issues that caused it the greatest concern. However, it believed the removal of these issues was only temporary as there was reference to intersessional meetings in the future. Despite its long history of work within the IWC on this topic, including work on the use of non-explosive ('cold') harpoons in the 1980s, Norway has decided to submit its TTD data to the Hunting Committee of NAMMCO, which has made good progress with this issue. It noted that the new action plan would result in a substantial extension of the scope of its work from hunting to incorporating all potential anthropogenic threats to cetaceans. It doubted whether all of proposed data could be collected or that a 'common understanding' of welfare for cetaceans could be reached. It believed that work on 'welfare' would be better carried out at workshops with invited experts, which is the way that NAMMCO works.

Japan stated that it took welfare issues seriously. It believed that this discussion had become too acrimonious in the past and the data it had submitted had been misused by some to show the worst case scenario. In 2003 it stopped providing data to IWC for this reason and, in the interests of transparency, began to submit its data to NAMMCO, where they are publically available. Japan noted with appreciation that the UK's proposal was intended to reduce the previous acrimonious approach to this issue. It would follow any further debate with interest but would not participate. Iceland associated with the comments from Japan and Norway.

Australia spoke in favour of the proposal, associating with the statements from Italy and the UK. It noted that NAMMCO is not the responsible global body to which such information should be submitted, as it was a body for the study of marine mammals in the North Atlantic only. Australia requested that the data be submitted to the IWC as the only body with global responsibility.

The Russian Federation said that it had submitted all of its data to the IWC, and would continue to do so. It believed that welfare is a philosophical question. It asked for clarification as to how hunted whales are pronounced as dead at sea, and enquired whether the Scientific Committee have a definition for this. The Russian Federation did not agree with Australia's view on NAMMCO, which in their opinion used a scientific approach and had expertise in the subject of whale hunting. It considered that it was very important to consider the safety of whalers when discussing these welfare issues.

NAMMCO stressed that it was a fully competent intergovernmental organisation for management of cetaceans under UNCLOS. It referred to the discussion within the WG on WKM&AWI (see Item 13.2 above) on the manuals it had developed for safe use of weapons and other hunting equipment, which are available on the NAMMCO website[21].

Denmark acknowledged the importance of work on welfare, as it was relevant to its hunts in Greenland and the Faroes; however, it could not support this proposal as its concerns previously expressed during the Working Group (Annex H, Item 6) remained unresolved.

The UK re-emphasised that this work was not intended to interfere with hunters' welfare. Rather, it wished to establish a strategic approach to a subject relevant to many of the IWC's work programmes.

The Alaska Eskimo Whaling Commission (AEWC) made a statement on hunting efficiency in a time of climate change. Hunting is dependent on environmental conditions, for example, whales can slip under the ice after they are struck. In 1977 the AEWC promised to raise the efficiency of their hunt to 75%, and now it is at 80% or more, due to better equipment and hunter training. Arctic stakeholders

[21] *http://www.nammco.no/.*

have been working together to maintain hunt efficiency in the face of climate change and increased oil exploration. The AEWC has joined other organisations from the area to form the Arctic Marine Mammal Coalition and the Arctic Waterways Safety Committee.

13.4.2.3 ACTION

Following a break and a recognition of absence of consensus, the UK introduced a second revised version (IWC/65/WKM&AWI05rev2) with updated recommendations.

Norway noted that, while they continued to find the revised proposal ambitious, they would not block consensus.

South Africa expressed support for the proposal and indicated its willingness to join the Intersessional Working Group on Welfare.

The Chair was pleased to note that after these extensive efforts by the UK, Norway and others, the revised name ('Working Group on Whale Killing Methods and Welfare Issues', WG-WI), Terms of Reference and action plan outlined in IWC/65/WKM&AWI05rev2 was **adopted by consensus**. The adopted text can be found as Annex H, Appendix 4.

The UK announced that they will commit £20,000 towards continuing this work.

World Animal Protection (an NGO) commended work underway to address important welfare issues and announced a collective funding contribution totalling £10,800 from the following NGOs: Animal Welfare Institute, Humane Society International, International Fund for Animal Welfare, Ocean Care and World Animal Protection. This money is to assist in expanding the work of the disentanglement network and training programme, as well as progressing work to improve and share knowledge on the humane treatment of stranded whales.

14. REVISED MANAGEMENT PROCEDURE (RMP)

14.1 Introduction

The Chair noted that Scientific Committee's work on this item can be found in IWC/65/Rep01 (under Item 5 for general issues and Item 6 for *Implementation*-related matters in both 2013 and 2014). General issues covered included the completion of the review of maximum sustainable yield rates, and ongoing work on the *Catch Limit Algorithm* and RMP guidelines and annotations. The Committee had completed its *Implementation Review* of western North Pacific common minke whales and expected to have completed the *Implementation Reviews* for North Atlantic fin whales and common minke whales before IWC/66.

14.2 Commission discussions

14.2.1 Icelandic whaling

Italy, on behalf of the EU, supported by Australia, New Zealand and the USA, strongly supported the moratorium on commercial whaling. It said that it had approached Iceland formally through diplomatic channels on the issue of its fin and common minke whale quotas, and also on the issue of their resistance to inclusion of these species in CITES. Italy, on behalf of the EU, had urged Iceland to withdraw its Objection to paragraph 10(e) of the Convention as it believed that all Contracting Governments should abide by every paragraph of the Convention. It highlighted the increase in whalewatching in Iceland and suggested that commercial whaling could undermine the development of this emerging industry.

Argentina, supported by Australia and the USA, stated that it opposed the taking of whales and supports the moratorium and sanctuaries. It appreciated Iceland's efforts on environmental matters in other international agreements. Argentina associated itself with the diplomatic efforts of Italy and the EU and called on Iceland to reconsider issuing quotas for common minke and fin whales. It hoped Iceland would consider eliminating commercial whaling and begin to follow the moratorium.

The USA, supported by Australia and New Zealand, encouraged Iceland to adhere to the moratorium and reconsider its decision to continue to issue fin and common minke whale quotas. The USA was concerned at the significant increase in catches since 2009. It stated that because of these increasing activities, the USA Secretaries of Commerce and the Interior had certified that Iceland's commercial whaling and international trade in whale products are diminishing the effectiveness of the ICRW and CITES. The USA had thus directed relevant departments and agencies to take a number of diplomatic actions. The USA also strongly urged Norway to cease commercial whaling and international trade in whale products.

Iceland stated that it attached great importance to the principle of sustainable use of natural resources. Its whaling is only directed to abundant stocks; it is based on science and is sustainable and strictly managed in accordance with international law. Iceland depends economically on sea food exports, including the legal export of whale products. It believed that all international discussions should be based on law. Several countries catch whales, and these whaling operations are all legal in accordance with IWC. Iceland has had an emphasis on conservation for many years and takes this approach to its whaling operations. In 2002, it made a lawful reservation to paragraph 10(e) so that it was not legally bound by the paragraph and could resume commercial whaling. The catch limits in the hunt follow scientific advice from the Marine Research Institute of Iceland. Abundance levels of the stocks have been confirmed by IWC and NAMMCO, and recommended catch limits are within sustainable rates. Iceland noted that IUCN has not listed either species as Endangered or Vulnerable. It saw no reason why whalewatching and whaling cannot co-exist.

Japan supported the intervention by Iceland. As it had stated under Item 6, it believed that Schedule paragraph 10(e) did not prohibit commercial whaling but rather set a zero catch limit until such time as a Comprehensive Assessment could be undertaken to confirm safe catch limits. The RMP was developed for this purpose and was adopted by the Commission through consensus in 1994. The recent judgement of the ICJ also supported the use of the RMP as a management measure. Japan highlighted the inconsistency of approach in the Commission caused by representatives of countries who oppose commercial whaling continuing to work on the RMP in the Scientific Committee. The RMP is an extremely conservative management measure. Many fishery resources are harvested at lower stock levels than the RMP allows. The Scientific Committee has carried out *Implementation Reviews* on several species such as the North Atlantic fin whale and North Atlantic common minke whale amongst others, and Norway and Iceland have established their quotas based on this RMP work; according to the RMP their catches are sustainable and it believed that they should be allowed under paragraph 10(e).

New Zealand said that it had objected to Iceland rejoining the Convention with a reservation on paragraph 10(e) since it did not believe this was legal. It interprets paragraphs

228-230 of the ICJ judgement as meaning that whaling not carried out under Aboriginal Subsistence Whaling or Special Permit programmes is illegal.

Brazil, Ecuador, Chile, Colombia, Peru, Mexico, Panama, Uruguay, Costa Rica and the Dominican Republic associated themselves with the statements made by Italy and the EU states, Argentina, Australia, New Zealand and the USA.

Norway and the Russian Federation associated themselves with Iceland and Japan. The Russian Federation said that it was not presently involved in commercial whaling for technical reasons but still had a right conduct to commercial whaling. It said that several countries do not consider Iceland as a full member of the IWC and wondered why in that case they wanted to discuss commercial whaling with Iceland and not with other non-members such as Indonesia or Canada. It considered that Iceland had fulfilled all its obligations under the IWC and CITES Conventions and that the science had proved that their hunt would not have any effect on the stocks.

Iceland reiterated that it believed its whaling was based on the rule of law and did not believe that criticism based on other factors was valid.

15. SCIENTIFIC PERMITS AND OTHER RELATED ITEMS

15.1 Implications for the IWC of a recent case before the International Court of Justice entitled 'Whaling in the Antarctic' Australia *vs* Japan; New Zealand intervening[22]

15.1.1 Introduction by the parties to the case

15.1.1.1 JAPAN

Japan introduced IWC/65/22, its summary of the main points of the ICJ judgement relevant to this and related IWC/65 agenda items. It stated that the judgement was only binding on the Parties to the case and that the IWC has no legal obligations to obey the judgement unless it makes decisions to that effect. However, Japan recognises that the judgement may have implications for IWC discussions. It stressed that Operative Clause 247, paragraph 7 of the ICJ judgement means that the judgement only relates to JARPA II.

Japan noted the final sentence at paragraph 56 of the judgement concerning the objectives of the ICRW, which states that Contracting Parties 'decided to conclude a Convention to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry', which Japan interprets as supporting the sustainable use of whales. Japan stated that amendments to the Schedule may emphasise an objective but cannot deny the purpose of the ICRW.

Japan noted that paragraph 83 of the judgement indicated that Australia and New Zealand had overstated the legal significance of the recommendatory resolutions and guidelines on which they rely. Japan also highlighted that the second section in paragraph 83 states that relevant resolutions and guidelines approved by consensus 'do not establish a requirement that lethal methods be used only when other methods are not available'.

Japan further noted that, while the sale of whale meat is often presented as evidence of commercial whaling, the ICJ's view in paragraph 94 was 'that the fact that a programme involves the sale of whale meat and the use of proceeds to fund research is not sufficient, taken alone, to cause a special permit to fall outside Article VIII'.

In relation to JARPA II, paragraph 227 states that the ICJ finds that 'the evidence does not establish that the programme's design and implementation are reasonable in relation to achieving its stated objectives'. Japan regretted this, and noted the next sentence of this paragraph states that the special permits granted by Japan for JARPA II are not for scientific research as defined in Article VIII. Japan commented that in its view, this conflicted with wording in paragraph 127, which reads that JARPA II activities involving lethal sampling or whales can broadly be categorised as 'scientific research'. Japan believed that the ruling was not clear, since one paragraph concludes that JARPA II was for purposes of scientific research, and another paragraph concluded the opposite.

Japan highlighted paragraph 246 concerning future issuance of special permits for scientific whaling. It concluded from this that the judgement only says that Japan should revoke existing licences issued under JARPA II and that the Court assumes that Japan will submit a new research plan and, in doing so, it will take into account paragraph 88, concerning the meaning of 'for the purposes of'.

15.1.1.2 AUSTRALIA

Australia encouraged all interested delegates to read the full judgment. While acknowledging that the decision of the Court only formally binds the Parties to the case, it stressed that pronouncements of the ICJ are regarded as authoritative and reliable statements of international law and the principles enounced are ordinarily followed.

Australia noted that the ICJ found that the granting of permits under JARPA II could not be justified as being 'for purposes of scientific research' under Article VIII of the Convention. Consequently, the ICJ found that the JARPA II programme was not consistent with the Convention, including the moratorium on commercial whaling, the factory ship moratorium and the Southern Ocean Sanctuary. While noting that special permit whaling could be permissible in the future if in accordance with Article VIII, Australia stressed that it does not regard lethal scientific research to be necessary.

Australia said that the ICJ elaborated the objective criteria that must be fulfilled for a special permit programme to be consistent with Article VIII and that it is essential that these parameters be included in the IWC criteria for the consideration of any future special permit programme. Australia highlighted four of these criteria: (1) that each of two cumulative elements in Article VIII – 'scientific research' and 'for purposes of' – must be satisfied; (2) that the elements of a programme's design and implementation are reasonable in relation to its stated scientific objectives; (3) the use of lethal methods; and (4) that the scale of lethal sampling cannot be greater than is otherwise reasonable in relation to achieving the programme's objectives.

15.1.1.3 NEW ZEALAND

New Zealand noted that, although the ICJ confirmed that scientific whaling was permitted under the Convention and that Japan has the opportunity to reconstruct a programme of scientific whaling in accordance with the Court's decision, the Court sent Japan a strong signal about the wisdom of such a course of action. It hopes Japan will heed that signal and amend its approach to Southern Ocean whaling.

New Zealand considered the ICJ to mark a fundamental waypoint in the history of the ICRW and Japan should not consider that it was 'business as usual'. It stressed that the ICJ ruled unambiguously that a programme of whaling that had been carried out in the Southern Ocean for the past eight years, purportedly on the basis of Article VIII of the

[22]See also the substantive discussions under Item 7.5.

Convention, was in fact outside the scope of the Article and therefore breached certain provisions of the Convention, including the moratorium on commercial whaling, and must cease. New Zealand considered that the ICJ is a vindication of New Zealand's and others' longstanding opposition to what Japan calls 'scientific whaling' in the Southern Ocean.

New Zealand stressed that the ICJ dispelled the notion that any single Party can decide for itself on the scope and implementation of Article VIII. Instead, a State wishing to take whales under Article VIII must establish, on an objective basis, that the use of lethal methods is 'for purposes of scientific research'.

New Zealand referred to the final sentence of ICJ paragraph 219, regarding scientific publications arising from JARPA II: 'In light of the fact that JARPA II has been going on since 2005 and has involved the killing of about 3,600 minke whales, the scientific output to date appears limited'. New Zealand considered this to be a significant judicial understatement.

Finally, the ICJ clarified that Contracting Governments to the ICRW have a duty to co-operate with the IWC and the Scientific Committee and must pay due regard to the recommendations of the Commission regarding the use of lethal methods.

15.1.1.4 COMMISSION DISCUSSION AND ACTION ARISING

Mexico noted that the ICJ judgement should be considered as a whole, as referring to extracts only could lead to the wrong conclusions. Mexico drew attention to paragraph 246 of the judgement, which states that the obligation to comply with Article VIII of the Convention applies to all Contracting Governments, remarking that any future permits issued must be reviewed in light of the objectives of the Convention, and including with respect to Article VIII. Mexico stressed that this represents an opportunity to do things differently and warned that not to do so would undermine the work of the Commission and lead to more infractions and ICJ cases.

The USA, Argentina, Brazil, Monaco and Uruguay associated themselves with the comments made by Mexico. In addition, the USA pointed out that lethal research is unnecessary for whale conservation and management. Monaco drew attention to paragraph 61 of the judgement, which states that 'whether the killing, taking and treating of whales pursuant to a requested special permit is for purposes of scientific research cannot depend simply on that State's perception', and concluded that the Commission needs to be consulted before special permits are issued.

Iceland expressed their support for the views presented by Japan.

Japan stressed that, to avoid any possible misunderstandings, it should be clear that Japan fully abides by the ICJ judgement and that it will continue to do so. Japan further stressed that JARPA II has been ended and that any new research programme would take into account the conclusions of the ICJ judgement.

The Chair noted that the Commission discussed issues relevant to the ICJ judgement in greater detail at Item 7.5 in its consideration of Resolution 2014-5 'Whaling under Special Permit'.

15.2 Review of results from existing permits

15.2.1 Expert scientific review of results from existing permits

15.2.1.1 ANNEX P REVIEW OF THE ICELANDIC RESEARCH PROGRAMME 2003-07

The Chair noted that the Scientific Committee had discussed the review of the completed Icelandic Special Permit programme in 2013 that took 200 common minke whales from 2003-07 (IWC/65/Rep01 (2013), Item 17.1) An Expert Panel had met in February 2013 (SC/65a/Rep03[23]). The Committee had thanked the Panel for its thorough review and acknowledged the efforts of the proponent scientists in providing revised papers. Comments from two groups of scientists were appended to the Committee's report.

15.2.1.2 ANNEX P REVIEW OF JARPA II

The Chair noted that an expert panel review of the ongoing results from JARPA II had taken place in Tokyo in February 2014, prior to the ICJ ruling (the report is SC/65b/Rep02[24]) and it was presented to the Scientific Committee at its 2014 meeting. As recorded in the report of that meeting (IWC/65/Rep01 (2014), Item 17.1), scientists from some countries did not participate in the discussion related to JARPA II agenda items at the 2014 Scientific Committee as they considered it inappropriate for the Scientific Committee to continue the review of the JARPA II programme under Annex P following the ICJ judgement.

Japan explained that a comprehensive review of JARPA II was conducted by the expert panel and considered that the review provided very useful insights to inform future research activities.

In response to a query from Mexico, Japan clarified that JARPA II stopped on the day of the ICJ judgement (31 March 2014) and that it would not resume.

Chile, Australia, Argentina, Brazil, Costa Rica, Ecuador, France, Monaco, UK and Uruguay stressed that, since the ICJ concluded that JARPA II permits were not 'special permits', the Annex P review process of the Scientific Committee for reviewing 'special permit' whaling no longer applied to the JARPA II programme. As a result, many delegations did not participate in the review and therefore it did not encompass views from all Governments concerned and its findings were considered to be unrepresentative. These countries suggested that, in light of this and the significant concerns about whether it was appropriate to undertake a review of a programme declared to not be consistent with Article VIII of the Convention, the Commission should not endorse the JARPA II review arising from the Scientific Committee, and therefore the Commission should not endorse Item 17.1 of the 2014 Report of the Scientific Committee.

Japan noted that, while the opposition to the review is recorded in the Scientific Committee report, the review of JARPA II by the Scientific Committee prior to consideration by the Commission was done in accordance with the advice provided by the Chair of the Commission. Japan commented that it believed that the ICJ judgement cannot be applied retrospectively in relation to this issue and that data obtained through JARPA and JARPA II can and should be used for scientific analysis. It asked Australia whether it considered that past papers that have been published using these data should be withdrawn. Japan also noted that countries that had chosen not to attend the relevant discussions during the Scientific Committee meeting had requested data that originated from JARPA and JARPA II. In this regard, Japan expressed its understanding that such data would not be requested in future and questioned how the data obtained would be used by countries that disagree with Japan's interpretation.

[23] *Published as:* IWC. 2014. Report of the Expert Workshop to Review the Icelandic Special Permit Research Programme, 18-22 February 2013, Reykjavik, Iceland. *J. Cetacean Res. Manage. (Suppl.)* 15:455-88.

[24] *Published as:* IWC. 2015. Report of the Expert Workshop to Review the Japanese JARPA II Special Permit Research Programme, 24-28 February 2014, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 16:369-409.

Australia remarked that some of the judgement's conclusions do apply retrospectively, drawing attention to the wording that 'Japan has not acted in conformity with its obligations under paragraph 10 (e) in each of the years in which it has granted permits for JARPA II (2005 to the present)'.

Mexico, supported by Uruguay, requested that all mention of JARPA II be eliminated from the Scientific Committee report.

The Chair concluded that there was no agreement under this Item on whether or not the Commission should endorse Item 17.1 (the JARPA II review) in the 2014 Scientific Committee report. The Commission returned to this subject under Item 24.2.

15.2.2 Other review of results from existing permits

15.2.2.1 JARPN II

The Chair noted that the Scientific Committee had received regular progress updates from the JARPN II programme and that it was almost ready for a periodic review under the Annex P process with an expert panel Workshop expected in early 2016. Scientific Committee discussions of this and related matters with respect to JARPN II and revisions to it can be found in SC/65/Rep01 (Item 17.5 in 2013 and Item 17.3.2 in 2014).

15.3 Review of new or continuing proposals

15.3.1 Planning for an Annex P review of JARPN II

The Chair referred to discussions under Item 15.2.2. No further comments were made under this Item.

15.3.2 Future Japanese special permits in the Antarctic

Japan explained its response to the ICJ judgement, emphasising again that JARPA II has finished. It stated that paragraph 246 of the judgement 'expected that Japan will take account of the reasoning and conclusions contained in this judgment as it evaluates the possibility of granting any future permits under Article VIII, paragraph 1, of the Convention.' In accordance with this, the Japanese Minister for Agriculture, Fisheries and Forestry had made a statement[25] indicating that Japan will review the design of its Antarctic research programme, with the aim of submitting a new research plan that takes account of the ICJ judgement.

Japan noted that, following the present Annex P process, the new research plan will be made available in early November 2014, an expert Workshop will take place to review the research plan in January or February 2015, and the report from the Workshop will be submitted to the Scientific Committee for discussion in May 2015. It stated that the new plan will take account of suggestions made during the JARPA II review in February 2014 and will address the criteria outlined in paragraph 88 of the ICJ judgement. Japan stated that the process will be open and transparent, involving Japanese and international scientists and the IWC Scientific Committee.

Further discussion was heard under Item 7.5, 'Resolution on Whaling under Special Permit'.

15.4 Procedures for reviewing special permit proposals

The Chair noted that the Scientific Committee's present procedure for reviewing special permit proposals, known as Annex P, had been clarified by the Committee in 2014 (IWC/65/Rep01, Item 27.3). The Commission's instructions for the Scientific Committee to review and if necessary amend Annex P are considered under Item 7.5, 'Resolution on Whaling under Special Permit'.

[25] *http://www.jfa.maff.go.jp/e/pdf/danwa.pdf.*

15.5 Other

There were no discussions under this agenda item.

16. SAFETY ISSUES AT SEA

16.1 Introduction

Japan made a presentation on the sabotage activities undertaken by the Sea Shepherd Conservation Society (SSCS) against Japanese vessels and stressed the danger posed to crew members, the environmental impacts of introducing non-biodegradable materials into the Antarctic Ocean, and the impacts on the research programme.

Japan noted that in 2012, the USA Court of Appeal issued an injunctive order stating that Paul Watson and SSCS should not come within 500 yards of Japanese vessels on the high seas, nor should they launch attacks on or navigate in a way to threaten the safe navigation of these vessels. In 2013, the USA Circuit Court of Appeal stated that SSCS activities are clear instances of violent acts for private ends and therefore could be considered piracy. SSCS ignored the court order and undertook sabotage activities in 2012-13 and 2013-14.

Japan recorded it had provided information on these criminal acts to the International Maritime Organization (IMO). It considered that the lack of sufficient action by flag States (Australia and the Netherlands) and port States (Australia and New Zealand) had enabled the SSCS to undertake its violent activities and requested more stringent measures to be undertaken, and drew attention to IWC Resolution 2011-2 on Safety at Sea.

The Taiji Fishing Association (an NGO) stated that the drive fishery in Taiji for small cetaceans is strictly controlled and the catch limits are scientifically based. It described how the SSCS and other organisations visit every year to sabotage the hunt. It indicated that the sabotage inflicts physical damage, impacts the dignity of the fishermen, and has led to a threatening atmosphere in the town.

Japan stated its position that small cetaceans are outside the remit of the IWC.

16.2 Commission discussion and action arising

The Netherlands and Australia stated that the IMO is the appropriate forum for discussions on safety at sea and that they believed unlawful activity should be dealt with through national and international law. Australia, the Netherlands, New Zealand and the USA highlighted their joint statement from December 2013 in which they condemned any actions at sea that may cause injury, loss of human life or damage to property or the marine environment. They noted that they respected the right to protest peacefully on the high seas and highlighted their concern regarding the escalating violence and condemned dangerous, reckless and unlawful behaviour.

New Zealand also noted that it has a search and rescue responsibility in the Southern Ocean, and believed the actions of SSCS to be reckless and fundamentally unsafe. Search and rescue operations divert resources from the science supported by national Antarctic programmes. New Zealand expressed concern regarding the potential for environmental damage resulting from confrontations between whaling and protest vessels and indicated they did not support dangerous and irresponsible behaviour by any party.

Denmark explained that the Faroe Islands is a self-governing territory that is not within the EU. The Faroe Islands recognised the continued civil society interest in its whale drive and the importance of freedom of speech and peaceful protest. However, it emphasised it had no basis

for dialogue with SSCS, which has put life and property at risk in the Faroes. It commended NGOs that engage in transparent dialogue and peaceful protest.

The USA expressed concern about the sustainability and welfare issues of the Taiji hunt.

In response to comments made, Japan noted that it fully supported peaceful, lawful demonstrations. It believed that some SSCS captains do not have Master's certificates and asked that this should be addressed immediately. It noted that flag States are responsible for ensuring organisations including SSCS abide by the law, and urged flag States to take action to prevent illegal activities.

The Japanese Whaling Association (an NGO) noted that the seamen going to the Southern Ocean for whale research face very dangerous conditions as a result of SSCS sabotage. It noted that SSCS have ignored a USA court order to stop its sabotage behaviour and urged port and flag States to stop accommodating this organisation.

17. CATCHES BY NON-MEMBER NATIONS

The Commission welcomed the fact that it had received reports from Canada on their subsistence catches of bowhead whales for the seasons 2012 and 2013. No report was received from Indonesia. The Secretariat was encouraged to continue its efforts to obtain information on catches by non-member nations.

18. INFRACTIONS, 2012 AND 2013 SEASON

18.1 Report of the Infractions Sub-Committee

The Infractions Sub-Committee met on 11 September 2014 and its report (originally IWC/65/Rep03) is provided as Annex I. Appendices 3 and 4 of the report included summaries of infraction reports received from Contracting Governments regarding catches in 2012 and 2013. The Chair of the Sub-Committee (Lars Walløe, Norway) summarised its findings to the Plenary session. Major discussion points included: whether accidental takes of calves and lactating whales should be seen as infractions given the difficulties with identifying these whales at sea; whether the catches taken by Denmark (Greenland) since 2012 should be treated as infractions as they had not obtained a strike limit at IWC/64 in 2012; and how the IWC databases will describe catches taken under the Japanese JARPA II programme.

A summary of catches by IWC member nations in the 2012 and 2012/13 and 2013 and 2013/14 seasons is provided as Annex J.

18.2 Commission discussion and action arising

18.2.1 Lactating whales and calves

The Russian Federation noted that it was hard to distinguish calves at sea and therefore they should not be considered infractions.

18.2.2 Greenland catches in 2013 and 2014

Denmark (Greenland) stated that it had submitted catch reports for 2013 but it did not consider these catches or those in 2014 to be infractions. It stated that portraying its aboriginal take as an infraction did not reflect the exceptional circumstances it faced or that all Greenlandic catches were strictly regulated.

Argentina recognised the discussions in Annex I (Item 3.1) on this issue and reiterated its comments that since Denmark (Greenland) had not been given a strike limit at IWC/64 in 2012, any whales hunted in Greenland in 2013 and 2014 should be reported as infractions.

Australia supported this view and did not believe that it should be left to the discretion of a Contracting Government to decide that there are circumstances special enough to justify acting in a manner not authorised under the Convention. It said that the circumstances described by Denmark (Greenland) explained their actions but did not justify them.

Argentina, Brazil, Chile, Uruguay, Mexico, Ecuador, Costa Rica, Peru, Panama and New Zealand associated themselves with Australia.

The Russian Federation believed the Commission should adopt the suggestion that these catches should not be included as violations. The Republic of Guinea associated itself with the Russian Federation, stressing that Greenland's catches were for food security.

Iceland noted that in Greenland's case, its strike limit proposals had been accepted by the Scientific Committee but that the Commission had then rejected them. It recognised that Denmark and Greenland had worked hard intersessionally to resolve the matter. Iceland considered that biennial meetings of the IWC added to the problem as the Greenlandic people had to wait for two years for a resolution to the issue within the IWC. These were special circumstances and so Iceland did not believe that the catches from 2013-14 should be reported as infractions.

Japan and Norway associated themselves with Iceland and the Republic of Guinea. Japan stated that the Commission had denied Greenland any subsistence catches and now was asking for them to be reported as infractions. The Russian Federation agreed, saying that, since Denmark (Greenland) had not been given a zero quota, it was entitled to strike whales in accordance with the paragraphs in the Schedule dealing with ASW and the rights of indigenous people of Greenland to take whales for local consumption.

The Chair of the Commission considered this matter to be a problem with the Commission's procedures. In future, there needs to be a counter-proposal for such Schedule amendments that do not achieve the necessary three quarters majority. Thus if the Commission votes on a specific proposal, another is required should the first one fail. The USA agreed with this view.

Mexico, supported by Argentina, Costa Rica, Peru, the Dominican Republic, Monaco, Colombia and Uruguay, said this issue needed to be examined carefully, as there appears to be a problem in the wording of the Schedule such that, if an amendment is not adopted, Governments are free to act as they choose. Chile cautioned that this new interpretation of the Schedule may set a bad precedent; similar situations have arisen before, but this interpretation was not used in those previous instances.

The Chair considered that this was a consequence of the Commission's actions in Panama at IWC/64 when it had failed to give Denmark (Greenland) any quota, but had also not allocated a quota of zero. This did not leave Denmark (Greenland) with any advice or options on how to proceed. The Commission should ensure this situation does not reoccur in future.

New Zealand considered that the issue has resulted from Denmark (Greenland) asking for too high a quota at IWC/64 and agreed with the Chair that this situation should not be allowed to happen again.

St Lucia supported the view of the Chair that the Commission should take responsibility for making the organisation functional. Japan agreed, saying that the Commission should not discuss the specific case of Greenland again but rather try to find a system that prevents a repeat of this situation. When a decision is reached, this

text could then be appended to the infractions and catch reports for the Greenland hunts for this period. Antigua and Barbuda agreed with this in the spirit of compromise.

Denmark (Greenland) noted that the Greenland Authority conduct their hunt following IWC guidance and submit the necessary reports. Denmark (Greenland) stressed the exceptional circumstances following IWC/64 in 2012 and noted that it had engaged in great efforts to solve the issue and thanked the Commission for granting its revised ASW quota for 2014-18.

In conclusion, the Commission **agreed** that the unresolved issues concerning catches taken in Greenland in 2013 and 2014 should be referred to the Working Group on Operational Effectiveness and Cost Saving Measures.

18.2.3 Recording of JARPA II catches in the IWC database
With regards to the reporting of JARPA II catches through IWC databases, the Commission **agreed** that the databases should show the catches arising from the JARPA II programme as taken under special permits issued by Japan, but with a footnote indicating they had been discussed by the ICJ and including a reference to the Court's judgement and to the discussions documented in the present report (Items 7.5 and 15.1).

19. ENVIRONMENTAL AND HEALTH ISSUES

19.1 State of the Cetacean Environment Report (SOCER)
The SOCER provides an annual update on matters relevant to the environment and cetaceans. In 2013 the Mediterranean and Black Seas were the regional focus whilst in 2014 it was the Atlantic Ocean, Caribbean and Gulf of Mexico (see Item 12.1 in IWC/65/Rep01 in 2013 and 2014).

Italy, on behalf of the EU, stated that the health of the oceans is a serious concern and welcomed work undertaken by the Scientific Committee through SOCER.

19.2 POLLUTION 2000+ research programme
The Scientific Committee has been working on an innovative and important project to examine the effects of certain chemical pollutants on cetaceans and to predict population level effects through its POLLUTION 2000+ programme. A new web-based tool for population modelling has been completed and is nearly ready to be placed on the IWC website. A new phase of the project incorporating *inter alia* new pollutants has been recommended (see Item 12.2 in IWC/65/Rep01 in 2013 and 2014).

19.3 Cetacean diseases
The Scientific Committee has been working on the issue of Cetacean Emerging and Resurging Disease (CERD) since 2008 and progress on this and associated recommendations were discussed in 2013 and 2014 (see Item 12.3 in IWC/65/Rep01 in 2013 and 2014)

19.4 Anthropogenic sound
Scientific Committee discussions in 2013 and 2014 focussed on: soundscape and noise mapping as a contribution to highlighting priority areas/sound sources; noise and marine renewable energy devices; efficiency of marine mammal observers as a mitigation tool; overall measures to reduce anthropogenic ocean noise and behavioural responses to noise (see Item 12.4 in IWC/65/Rep01 in 2013 and 2014). Recommendations of most relevance to governments covered the endangered Baltic sub-population of harbour porpoises; promotion of noise reducing technologies; consideration of noise exposure limits; provision of data about noise generating activities (including industry and military) to allow improved evaluation of effects; adoption of the process described in Nowacek *et al.* (2013)[26] for minimising the effects of seismic surveys on cetaceans.

ORCA (an NGO) had investigated two mass strandings of long-beaked common dolphins in Peru and suggested that acoustic trauma could have been the cause. ORCA expressed support for the Scientific Committee's recommendations regarding anthropogenic noise and urged international noise regulation to prevent mass strandings. In particular, ORCA encouraged countries to implement mitigation plans; to take migratory patterns of cetaceans into account; and to report mass strandings to the IWC.

19.5 Climate change
The primary focus of discussions in the Scientific Committee (see Item 12.5 in IWC/65/Rep01 in 2013 and 2014) related to developing a future work plan and a review of the results of the Commission's Arctic Workshop (see below). The Committee commended the work of the Workshop and its recommendations.

DeMaster (USA), the Chair of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic held in Anchorage, Alaska in March 2014 presented the report (IWC/65/Rep07rev1[27]). The Workshop had benefited from a wide range of participants from various countries. It had focused on increased shipping and oil and gas activities and their impact on cetaceans, including recommendations to address these threats. Recommendations included having a standing IWC agenda item on the Arctic; increased cooperation with the Arctic Council Secretariat; increased cooperation with the IMO in relation to shipping traffic and ship strikes; increased cooperation with stakeholders; and a number of actions related to Arctic research.

The USA noted that climate change is leading to decreased ice cover in the Arctic and increased open water access for shipping. It expressed its support for the Workshop's recommendations, noting that while the IWC should remain as the main organisation dealing with whale conservation and management, there are important opportunities for co-operation.

The Commission **endorsed** the Workshop report and its recommendations, including in particular the request to establish greater contact with the Arctic Council.

19.6 Other habitat related issues
There were no comments under this agenda item.

19.7 Ecosystem modelling
The Scientific Committee reviewed ecosystem modelling efforts undertaken outside the IWC, explored how ecosystem models can contribute to developing scenarios for simulation testing of the RMP; and reviewed other issues relevant to ecosystem modelling within the Committee (see Item 13 in IWC/65/Rep01 in 2013 and 2014). Its discussions in 2013 and 2014 included modelling of predators and prey and possible competition among baleen whales, and a review of spatial/habitat modelling.

[26]Nowacek, D.P., Bröker, K., Donovan, G., Gailey, G., Racca, R., Reeves, R.R., Vedenev, A.I., Weller, D.W. and Southall, B.L. 2013. Responsible practices for minimizing and monitoring environmental impacts of marine seismic surveys with an emphasis on marine mammals. *Aquat. Mamm.* 39(4): 356-377.
[27]Published in this volume.

19.8 Health issues

New Zealand, supported by Uruguay, noted that whales and dolphins serve as indicators of the health of the oceans as they accumulate pollutants and they called for international cooperation to address this threat. Monaco noted that in addition to cetaceans accumulating pesticides and heavy metals there is an additional, emerging threat arising from the transformation of plastic debris into micro-particles which have an unknown interaction with the tissues of animals.

Pro-Wildlife (an NGO) recalled IWC Resolution 2012-1 adopted at IWC/64 on the possible negative health effects related to consumption of some cetacean products, and drew attention to an online database, established by OceanCare and Pro-Wildlife[28] that can be used to look for contamination levels in both humans and cetaceans.

19.9 Other

There were no comments under this agenda item.

20. OTHER SCIENTIFIC COMMITTEE ACTIVITIES

20.1 Small cetaceans

The primary topics (regarding species/areas) dealt with by the Scientific Committee vary each year according to venue (see Item 14 in IWC/65/Rep01 in 2013 and 2014). In 2013, it reviewed current status of selected populations of small cetaceans in east Asian Waters and in 2014 it undertook a review of the status of small cetaceans in the eastern Mediterranean and Red Seas. In both cases, the Committee identified a number of areas/populations of conservation concern. It also reviewed progress on previous recommendations and again identified areas/populations of concern. Grave concern was expressed over the status of the vaquita, Hector's dolphin, Irrawaddy dolphin, Yangtze finless porpoise, Amazon river dolphins and small cetaceans in Ghana.

20.1.1 Vaquita

Mexico referred to a statement it had issued with the USA (IWC/65/26rev1) on the vaquita which emphasised their concern and intention to work together to avoid its extinction. The statement asked for other nations' support, particularly those importing the large, illegally harvested fish, the totoaba (*Totoaba macdonaldi*) which is caught in gear that also catches vaquita in Mexico and is traded illegally on both sides of the Mexico-US border and overseas. The vaquita is an iconic species found only in the Gulf of California and is the most endangered marine mammal species alive today, with fewer than 100 individuals remaining. Previous efforts to conserve the vaquita have slowed the rate of decline, but the resurgence of the illegal totoaba fishery (which is also listed in CITES Appendix I) has caused the situation to deteriorate rapidly. Current estimates suggest that the vaquita faces imminent extinction, possibly by 2018.

Mexico and the USA were alarmed by these findings which were described in the Reports of the IWC Scientific Committee and of the International Committee for the Recovery of the Vaquita (CIRVA)[29]. Immediate steps are needed to prevent the extinction of the vaquita which include halting the entanglement of vaquita in gillnet fisheries, especially those associated with the illegal fishery for the endangered totoaba. The USA and Mexico believe that enhanced cooperation measures are necessary which should include:

- enforcement: supporting Mexico to enhance protection of the vaquita and combat the illegal capture and trade of totoaba;
- fishing gear technologies: research into technologies to replace gillnetting for finfish and measures to encourage adoption of these technologies;
- socioeconomic measures: Mexico and the USA have pledged to consider measures to promote vaquita conservation by providing economic incentives and/or alternative career opportunities for fishermen; and
- acoustic monitoring: maintain monitoring in order to continually assess the vaquita.

The USA commended Mexico for its past conservation initiatives noting that despite these efforts the plight of the vaquita had worsened. It expressed support for joint working with Mexico to assess the vaquita's conservation status and the need to develop fishing gear that does not trap vaquita as well as enforcing restrictions on smuggling. The USA supported the Scientific Committee's recommendation that all gillnets should immediately be removed from the upper Gulf of California to prevent extinction of the vaquita.

Argentina and Uruguay congratulated Mexico and the USA for their joint statement on the vaquita and their efforts to protect the vaquita.

The IUCN representative emphasised the findings of the July 2014 report of the CIRVA. The vaquita has continued to decline from around 600-800 animals in the early 1990s to about 100 animals today; extinction will occur within the next few years unless gillnet fishing is completely suspended in the Exclusion Zone recommended by CIRVA without delay. It was encouraged by the statements of Mexico and the USA, but emphasised that because of the high-value illegal international trade in totoaba which is the main target of part of the gillnet fishery, strict enforcement is required. In particular, IUCN urged the Governments of the USA and China to increase efforts to prevent the illegal totoaba trade into or through their territory, in accordance with CITES. IUCN referred to the extinction of the baiji and hoped that the vaquita will not follow.

Austria, supported by Monaco, Switzerland, Belgium and South Africa underlined the statement made by the IUCN expert. At IWC/64 in 2012, Austria had made the strongest verbal intervention it considered possible in an international body; it was now unclear what the next step might be, since words and documents were clearly not sufficient. Austria called for the most urgent action and asked all Commissioners to recognise their obligation and to work with the Commissioners of Mexico and the USA to immediately define what the IWC can still do to prevent the extinction of yet another species in its tenure. In this light, Austria extended the same offer with respect to the Commissioner of New Zealand regarding Maui's dolphin.

Several countries including Italy on behalf of the EU, the UK, Hungary, Argentina and Luxembourg highlighted the perilous status of the vaquita and urged action to prevent its extinction.

The Environmental Investigation Agency (EIA), on behalf of 48 NGOs, including 28 present at this meeting, expressed concern regarding the Critically Endangered vaquita, the most endangered cetacean species in the world. It referred to the most recent report of CIRVA that the

[28]Database available at *http://www.toxic-menu.org*.
[29]*http://www.iucn-csg.org/index.php/2014/08/02/the-vaquita-new-report-from-cirva-released/*.

species is on the verge of extinction unless fishery bycatch is eliminated. The main threat from gillnets has long been recognised but the decline has accelerated in recent years. At sea enforcement has failed and illegal fishing has massively increased in the last three years throughout the vaquita's range especially the lucrative and illegal totoaba fishery. Illegal fishing and illegal exports to China, including via the USA, have soared in recent years as demand in China for totoaba swim bladders has increased. The EIA commended Mexico's efforts but noted that more needs to be done, including immediate establishment by Mexico of a Gillnet Exclusion Zone covering the full range of the vaquita. EIA appealed to IWC Contracting Governments to support Mexico, and appealed particularly to the USA and China to ban the international totoaba trade.

20.1.2 Franciscana

Argentina noted that the franciscana is a coastal dolphin which it shares with Brazil and Uruguay. It is developing a plan of action to prevent bycatch and will send further information to the IWC. It noted the recommendations of the Scientific Committee and called upon Governments to apply these recommendations and to take all necessary efforts to protect all endangered small cetaceans.

Uruguay welcomed the plan of action for the franciscana, highlighting the importance of keeping such work on the IWC agenda.

20.1.3 Mekong river dolphin

Cambodia noted that it had issued two sub-decrees and one ministerial proclamation for the management and conservation of the Mekong river dolphin (Mekong River sub-population of Irrawaddy dolphin) and that Japan had co-operated, assisting with research and providing equipment. WWF is also providing support and Cambodia noted that recently two 6-7 month old calves had been seen. Cambodia noted that many dolphins had been killed by the Khmer Rouge, and hoped that contributions for small cetaceans from the IWC could assist Cambodia in its work.

20.1.4 Pink river dolphin (boto)

Brazil reported on recent actions to protect the pink river dolphin (boto), with a five-year moratorium on the commercial catfish fishery in the Brazilian Amazon, starting in January 2015. Recently, commercial fisheries have used river dolphin meat illegally as bait to catch piracatinga (a species of catfish), leading to a drastic reduction in river dolphin populations. The Brazilian environmental agency is inspecting fish processing plants which are required to present certification of origin for the fish products, so that when the moratorium comes into effect there will be no legal piracatinga on sale. The Ministry of the Environment is working with the National Institute for Amazon Research of the Ministry of Science, Technology and Innovation to develop a monitoring programme for the river dolphin populations during the moratorium. Brazil recognised the role of civil society in raising awareness of this issue, including a petition of over 50,000 signatures. The challenge is to reach out to local communities. Local consumption of catfish is exempt from the ban, but all use of dolphin meat as bait is forbidden since catfish are easy to catch with other bait.

20.1.5 Maui's dolphin

Several countries including Austria, Italy on behalf of the EU, Luxembourg, Monaco, Switzerland and the UK, expressed grave concern over the status of Maui's dolphin and welcomed the work of the Scientific Committee on this species.

The Animal Welfare Institute (AWI) on behalf of 107 NGOs, highlighted the severe population declines of Maui's dolphins (sub-species of Hector's dolphin) and noted the unsustainable rates of bycatch. It drew attention to a motion in 2012 by IUCN World Conservation Congress that called on New Zealand to urgently extend protection from a ban on gillnets and trawls to cover the entire habitat of Hector's and Maui's dolphins. It highlighted the Scientific Committee's recommendations calling for the prohibition of gillnet and trawl fisheries across Maui's dolphin habitat and noted that in May 2014, the Committee had emphasised that restrictions introduced in 2013 fall significantly short of those previously recommended and of what is required. AWI noted that large scale marine mining, seismic testing and oil and gas production were additional threats but stated that if human-induced mortality is curtailed, the Maui's dolphins are not doomed to extinction. It concluded by requesting that the IWC uphold the recommendations from the Scientific Committee's 2013 and 2014 meetings.

Hungary stressed the importance of all cetaceans and that action is urgently needed, particularly for Maui's dolphin with just 50 animals remaining.

New Zealand noted the comments of all who had spoken although it did not necessarily agree. New Zealand will continue to advocate for Maui's and Hector's dolphins, and has imposed restrictions on set net and trawl net fishing and uses observers, in addition to areas closed to trawling, as reported in their national Cetacean Conservation Report. New Zealand will continue to provide data to the Scientific Committee, but noted that management must be balanced and is broader than just the IWC.

20.1.6 Financial support for work on small cetaceans

Italy, on behalf of the EU, supported by Austria, Denmark, Germany, Luxembourg, Monaco and the UK expressed deep concern for the vaquita, Maui's dolphin in New Zealand and Yangtze finless porpoise in China. Italy encouraged the development of practical solutions and supported the recommendations of the Scientific Committee on small cetaceans. It asked the Scientific Committee to develop management plans relevant to small cetaceans and asked countries to provide data including that related to human-induced mortality. Italy welcomed the contributions to the Small Cetacean Voluntary Fund which, in part, support the participation of experts in the work of the Scientific Committee and hoped many countries would be involved. Italy pledged €15,000 to this work.

Denmark, on behalf of Greenland, noted concerns on small cetaceans and supported Italy's suggestion that countries should provide data on human-induced whale mortality but thought this should be on a voluntary basis.

The Netherlands was pleased to announce a contribution of €85,000 to the work of the Scientific Committee through the Small Cetaceans Voluntary Fund. In doing so, it questioned whether there should be an end to all whale killing. Its contribution was to be spent on work to enhance the work of the IWC on small cetaceans, non-lethal research methods, and to enhance dialogue including with communities involved on alternatives for subsistence whaling.

The UK, supported by Belgium and Switzerland, noted the ongoing illegal trade in the totoaba, commended Mexico for its work to reduce bycatch and urged parties and stakeholders to address the emerging threat of totoaba poaching. The UK stressed the urgent recommendations and expressions of grave concern made by the Scientific Committee in 2014 with regard to small cetaceans,

particularly: Maui's dolphin, Irrawaddy dolphin, Yangtze finless porpoise, franciscana, Amazon river dolphin (boto) and Taiwanese white dolphin (eastern Taiwan Strait sub-population of the Indo-Pacific humpbacked dolphin). The UK welcomed efforts to reverse the decline in these species and emphasised the UK's continued commitment to the IWC small cetacean fund to ensure these species do not suffer the same fate as the baiji. For this reason the UK donated £20,000 in 2013 to continue this important work and will now contribute a further £10,000.

Campaign Whale, an NGO, highlighted the threats facing small cetaceans, from toxic pollution and entanglement in fishing gear, to large scale commercial and subsistence hunting. It noted that the Scientific Committee and IUCN have recommended urgent action to save the vaquita, Maui's dolphin and other threatened small cetaceans. Campaign Whale believed that the greatest priority for the IWC should be to help to save these Critically Endangered species. Campaign Whale announced a collective contribution from 17 organisations totalling £16,000 to the Voluntary Fund for Small Cetaceans. Controbutors were: American Cetacean Society, Animal Welfare Institute, Australian Marine Conservation Society, Blue Voice, Campaign Whale, Cetacean Society International, International Fund for Animal Welfare, LegaSeas, Nancy Azzam, OceanCare, Pacific Orca Society, Pro Wildlife, the Whaleman Foundation, Whale and Dolphin Conservation, Windstar Foundation, World Animal Protection and WWF International.

20.2 Regional non-lethal research partnerships

Australia summarised the Scientific Committee's report (Item 19 in IWC/SC65/Rep01 in 2013 and 2014) on the work and long-term future of the Southern Ocean Research Partnership (IWC-SORP), established in 2008, and to which Australia has contributed approximately 32 million Australian dollars over six years. 11 countries are currently active members of the partnership.

Five research projects form the core of the Partnership. These are: (1) the Antarctic Blue Whale Project; (2) distribution, relative abundance, migration patterns and foraging ecology of three ecotypes of killer whales in the Southern Ocean; (3) a study of the foraging ecology and predator-prey interactions between baleen whales and krill; (4) phase I of a study on the distribution and extent of mixing of Southern Hemisphere humpback whale populations around Antarctica; and (5) acoustic trends in abundance, distribution, and seasonal presence of Antarctic blue whales and fin whales in the Southern Ocean. The work has led to a better understanding of cetaceans in the Southern Ocean and the Scientific Committee recognised the important contribution of the work and appreciated the donations from Australia and the USA.

Australia was pleased to see that the Partnership became a standing agenda item on the Other Southern Hemisphere Whale Stocks Sub-committee agenda as well as the Plenary agenda at the Scientific Committee meeting in 2014. Australia also noted that the Scientific Committee had allocated funds in its research budget to provide some short-term support for SORP coordination. However, Australia recommended that more stable funding to support this position be made available for the longer term.

20.3 Working methods of the Committee

The Scientific Committee reviews its working methods every year, for efficiency, transparency and fairness. Topics discussed in 2013 and 2014 (IWC/65/Rep01, Item 27 in both years) included: reducing costs at Annual Meetings; improved communication with the Commission; clarity, consistency and tracking of conservation recommendations; making Workshop reports more visible; updates to Rules of Procedure; data access under Annex P; and improving the budget review process. The Committee also welcomed the news that the *Journal* was now online and open access, reaffirmed the importance of the *Journal* to its work and welcomed the progress on archiving and making available online the Committee's papers (IWC/65/Rep01 2013 and 2014, Item 29 in both years).

20.4 Other activities

There were no comments under this item.

21. CO-OPERATION WITH OTHER ORGANISATIONS

The Secretariat introduced reports on the IWC's co-operation with other organisations (IWC/65/04 (2013) and (2014)). The IWC has several scientific and policy exchanges with other organisations, sends observers to their meetings, receives observers at its meetings and in some cases holds joint workshops (e.g. Item 10.2). The need for continued and increased collaboration has been noted in other parts of this report (e.g. Items 10.2, 10.5, 11.6, 19.5 and 20.1).

Uruguay introduced document IWC/65/25rev1 on the United Nations Environment Programme (UNEP) Minamata Convention[30]. Uruguay, the USA, Switzerland and Japan had led the process of negotiation of this new Convention on mercury pollution last year. It is one of the first conventions to come from the Rio+20 process and has been signed by 102 states and ratified by several IWC members including the USA, Uruguay, Monaco and Gabon. Through the Declaration of Kumamoto, some of the world's highest environmental authorities requested states to begin working on issues before their Governments had ratified the Convention. Uruguay, as Chair of the Minamata Convention Bureau, wished to work with the IWC Secretariat to see how the IWC can work with the Convention.

Italy on behalf of the EU stated that many of the problems facing cetaceans and the marine environment can only be solved by the IWC co-operating with other organisations. It stressed that they should be informed on the IWC's progress and that the IWC should be informed on their progress. Recently, both CMS and the IMO amongst others have referred to IWC expertise in their reports, and UNEP has recently acknowledged the IWC's work on the issue of marine debris. The IWC should cooperate with many other organisations to share information on highly migratory whales.

Costa Rica stated that IWC should coordinate with the Convention on Biological Diversity (CBD) to identify ecologically and biologically important areas in international waters.

The Animal Welfare Institute (AWI, an NGO) noted that the IWC has a long history of cooperation with CITES, which maintains a prohibition on international trade in whale products of species protected by the IWC. It stated that three Contracting Governments and a territory of a fourth country are trading in meat on a significant scale. The AWI drew attention to CITES Resolution Conf. 11.4 which expresses concern that international trade in meat and other products

[30] *http://www.mercuryconvention.org/.*

of whales is lacking adequate international monitoring or control. It also noted that at the CITES Conference of Parties in 2013, the UNEP-WCMC drew attention to the escalation of trade in whale products and noted that trade under reservation can be sizeable and may undermine the effectiveness of the Appendix I listing.

22. FINANCE AND ADMINISTRATION

The Finance and Administration (F&A) Committee met on 13 September 2014 and its report (originally IWC/65/Rep02) is provided as Annex K. The Chair of that sub-committee (Donna Petrachenko, Australia) summarised its findings to the Plenary session (below).

22.1 Meeting arrangements and procedures

22.1.1 Report of the Finance and Administration (F&A) Committee

The F&A Committee recognised that this is an opportune time to request feedback from the Commission on the move to biennial meetings, noting that this will be undertaken by the Secretariat (and see Item 22.4).

22.1.2 Commission discussions and action arising

22.1.2.1 REVIEW OF MEETING PROCEDURES

The UK recommended that for the 2016 Commission meeting, participants be given constant and easy access to information on the next agenda item to be covered, as well as a summary of the scientific and management advice from the Commission's advisory Committees. This could be achieved, for example, by large screens in the meeting room or coffee area.

The UK welcomed the Commission's move to paperless meetings.

The UK, supported by New Zealand, Peru and the USA, encouraged the Secretariat to conduct a formal review of the meeting arrangements in light of meeting procedural changes. This could include requesting focused feedback from Contracting Governments and observer organisations to help inform any further proposed changes (and see Item 22.4).

22.1.2.2 ANNUAL MEETINGS OF THE CONSERVATION COMMITTEE

During the Conservation Committee, Chile had proposed that annual meetings of the Conservation Committee should be held, in the light of the reduced time currently available for Committee discussions and the increasing areas of work undertaken (see discussions in Annex G, Item 12 and in Annex K, Item 4.1)

The Commission noted this proposal.

22.2 Communications

22.2.1 Report of the Finance and Administration Committee

The F&A Committee appreciated the work of the Secretariat on improving internal and external communications, including the website and document archive (Annex K, Items 3.2 and 3.3).

22.2.2 Commission discussions and action arising

The UK expressed appreciation to the Secretariat for the work that has gone into improving communications, particularly improvements to the website and providing updates on the Commission's growing programme of conservation and welfare work.

22.3 Measures to support the participation of Governments of limited means

22.3.1 Report of the Finance and Administration Committee

The F&A Committee had received a proposal to reconstitute the 'Working Group on Providing Options to Governments with Limited Means to Participate in the Commission's Work'. Japan had offered to chair this group and membership remained open (Annex K, Item 3.4).

22.3.2 Commission discussions and action arising

Japan invited members to join the above Working Group, emphasising the need for broad participation. Japan recalled that Cambodia, Ghana, St Lucia, USA, and UK had joined the Working Group so far. In response, St Kitts and Nevis stated that they would also join.

22.4 Report of the Working Group on Operational Effectiveness and Cost Saving Measures

22.4.1 Report of the Finance and Administration Committee (see Annex K, Item 4.1)

The F&A Committee proposed a new Working Group to deal with issues that the Working Group on Operational Effectiveness (WG-OE) felt were outside their mandate such as: review the utility and composition of existing Committees and Sub-Committees; streamline the duration and agendas for Sub-Committee and Plenary meetings; and consider developing a strategic vision or plan for the Commission to help guide its work.

During the intersessional period the Bureau was established, had met several times and had made some changes to meeting procedures. The WG-OE highlighted the need to get feedback from Commissioners on the new meeting procedures and noted that the IWC Secretary would follow up this issue after IWC/65 (see also Item 22.1).

The F&A Committee had endorsed the recommendations of the WG-OE including that it should continue to work on the issue of cost savings (also covered in Item 22.6). Additional members were sought and Chile, Argentina and Australia had indicated willingness to join the WG.

Discussion on annual meetings of the Conservation Committee is recorded above at Agenda Item 22.1.

22.4.2 Commission discussions and action arising

Antigua and Barbuda suggested that consideration be given on ways to improve broader participation in the WG-OE and noted that its working practices, for example, meetings via Skype, might be a barrier to participation for countries without reliable internet access. It noted that Antigua and Barbuda would potentially join the WG if such issues could be addressed.

The Chair proposed that the WG-OE work with Antigua and Barbuda and, if appropriate, put forward a proposal on this issue to IWC/66 in 2016.

22.5 Reporting of confidential communications

22.5.1 Report of the Finance and Administration Committee

The F&A Committee proposed a change to Rule of Procedure P.3 to improve the transparency of Commission operations (see Annex K, Item 4.2).

22.5.2 Commission discussions and action arising

The recommendation of the F&A Committee to change Rule of Procedure P.3 was **endorsed** (see also Item 24).

22.6 Cost saving measures

22.6.1 Report of the Finance and Administration Committee

The F&A Committee had received a report from the Secretariat (IWC/65/F&A06) summarising the cost saving measures implemented for IWC/65. The Committee recommended that the Secretariat continue to identify areas where cost savings could be obtained, including staffing levels, and investigate options to address high bank charges and low interest rates to report to IWC/66 in 2016 (see Annex K, Item 4.3).

22.6.2 Commission discussions and action arising

The recommendations of the F&A Committee were **endorsed** (see also Item 24).

22.7 Formula for calculating contributions and related matters

22.7.1 Report of the Finance and Administration Committee

No comments had been made by the F&A Committee on this agenda item.

22.7.2 Commission discussions and action arising

There were no discussions under this item.

22.8 Report of the Intersessional Correspondence Group on Strengthening IWC Financing

22.8.1 Report of the Finance and Administration Committee

The Intersessional Correspondence Group on Strengthening IWC Financing made a series of recommendations to the F&A Committee, and some amendments had been suggested during the meeting (see Annex K, Item 6)

22.8.2 Commission discussions and action arising

The UK confirmed that all amendments suggested during the F&A Committee meeting had been incorporated into a revised version of the recommendations of the Intersessional Correspondence Group on Strengthening IWC Financing.

The revised recommendations are given in IWC/65/F&A03rev1 and were **endorsed** by Commission. These include the establishment of a Voluntary Conservation Fund.

22.9 Establishment of a Voluntary Conservation Fund

22.9.1 Report of the Finance and Administration Committee

The revised recommendations are given in IWC/65/F&A03rev1 and were **endorsed** by Commission. The recommendations include, *inter alia*, the establishment of a Voluntary Conservation Fund[31].

22.9.2 Commission discussions and action arising

Antigua and Barbuda, supported by Ghana and St Lucia, was concerned that the Commission's work was becoming more dependent on Voluntary Funds. It stressed the need for transparency regarding the use of Voluntary Funds and suggested a scheme where 20-30% of each contribution was added to the General Fund.

The USA, supported by Japan, clarified that the ASW Voluntary Fund was being established to help aboriginal subsistence hunters who do not have the means to participate in IWC work. The fund can assist these hunters in research and implementing improvements in whale killing methods, which may be expensive to implement. The USA urged support for the ASW Voluntary Fund and suggested that the proposal by Antigua and Barbuda could be explored intersessionally.

Antigua and Barbuda agreed to join the Working Group on Operational Effectiveness (see Item 22.4) which should deal with this issue.

The recommendation to establish a Voluntary Fund for ASW as outlined in Appendix 4 of IWC/64/ASW05rev1 was **endorsed**[32].

22.10 Date and place of forthcoming meetings

22.10.1 Report of the Finance and Administration Committee

The Commission **accepted** the generous offer from the USA to host the next meeting of the Scientific Committee in San Diego, CA from 20 May to 4 June 2015. There were no offers to host the subsequent Scientific Committee meeting or the next Commission meeting, both in 2016.

23. FINANCIAL STATEMENTS, BUDGETS AND OTHER MATTERS CONSIDERED BY THE BUDGETARY SUB-COMMITTEE

23.1 Review of Provisional Financial Statement for financial year ending 31 August 2014

23.1.1 Report of the Finance and Administration Committee

The F&A Committee and the Budgetary Sub-Committe (BSC) recommended adoption of the Provisional Financial Statement for the year ending 31 August 2014 (see Annex K, Item 7.1). In addition, the F&A Committee recommended amending Rule of Procedure A.3, as suggested by the Secretary, to assist in the process of collecting contributions.

23.1.2 Commission discussions and action arising

The Commission **endorsed** these recommendations, including the change to Rule of Procedure A.3 and the Provisional Financial Statement to the year ending 31 August 2014.

23.2 Scientific Committee future work plan and research budget

23.2.1 Report of the Finance and Administration Committee

There had been agreement in the F&A Committee to reduce the contingency fund in the Scientific Committee budget to 10% (see Annex K, Item 7.2 and also Item 23.3) and on options to deal with the unspent funds of *ca* £135,000. However, consensus had not been reached on the funding of workshops to review special permits.

23.2.2 Commission discussions and action arising

Australia, supported by Argentina, France, Germany, New Zealand, and the UK, believed that the costs of assessing and reviewing self-issued Special Permits under Article VIII should be borne by the issuing Contracting Government and that IWC funds should not be used for intersessional workshops reviewing Special Permit proposals or results. Australia recognised the obligation under Paragraph 30 of the Schedule to review Special Permit research and the additional obligations under consideration in Resolution IWC/65/14rev1[33]. However, it considered these reviews to be part of the Scientific Committee's normal business to be

[31]See Appendix 2 of the Financial Regulations.

[32]See Appendix 3 of the Financial Regulations.

[33]This document was subsequently adopted as Resolution 2014-5 on Whaling under Special Permit.

undertaken at its Annual Meetings. If additional time was required, then a Workshop could be held immediately prior to an annual SC meeting at little additional expense. If a Contracting Government proposing to issue a Special Permit wished to meet at another time, Australia believed that that country should incur all additional costs.

Australia also expressed concern that participation in intersessional Workshops on Special Permits was reduced because very few regular members of the Scientific Committee were able to attend, which reduced the quality of the reviews.

The USA supported the inclusion of the Workshops in the Scientific Committee budget, noting that it is the responsibility of the IWC to review Special Permit proposals. It was sympathetic to Australian concerns and suggested exploring options to reduce costs by making the reviews coincide with existing meetings.

Japan, supported by Iceland, noted that the expert Workshops are part of the Annex P procedure[34] required by the Scientific Committee. It believed that, if future potential proponents had to bear these costs, it would disadvantage countries of limited means, contravening Article VIII of the ICRW. Japan supported the inclusion of these workshops in the budget.

Japan explained that if the timing of these workshops were changed as suggested by Australia, this would necessitate a change to the Annex P procedure, which currently requires the reviews to take place 100 days before the Scientific Committee meeting. Changes to Annex P would require 60 days prior notice to the Commission under Rule R of the Rules of Procedure. Japan noted that it has planned Workshops in January/February 2015, adhering to the timing outlined in Annex P and it was important not to confuse this shorter term issue with any longer term changes to procedures.

Noting that consensus was not reached on whether the workshops should be included in the Scientific Committee budget, the Chair proposed a short adjournment for further consultation. Upon resumption, the Chair of the F&A Committee reported that Australia, Japan and New Zealand had reached agreement and proposed that the Scientific Committee budget be approved, with the proviso that the £23,000 currently allocated for a specialist Workshop in 2016 would be placed in square brackets, pending the outcome of deliberations by the Scientific Committee on the Annex P process.

With this proviso, the Scientific Committee budget was **endorsed** and is given as Annex M.

Referring to Item 26 of IWC/65/Rep01 (2014), New Zealand expressed its support for the position of a coordinator for the Southern Ocean Research Partnership and hoped that this role would be given longer term funding.

23.3 Consideration of budget for the biennial period 1 January 2015 to 31 December 2016

23.3.1 Report of the Finance and Administration Committee

The F&A Committee recommended adoption of the 2015-16 budget as presented in IWC/65/07 except with an amendment to reduce the 1.5% increase in Contracting Government contributions to 0% (see Annex K, Item 7.3). This would be partly offset by reducing the Scientific Committee contingency budget to 10% of the research allocation. In addition, the Committee recommended that observer fees remain at their present level until 2016 and that media fees will be waived in future.

23.3.2 Commission discussions and action arising

Antigua and Barbuda, supported by Grenada and St Kitts and Nevis, agreed with the need to continue charging fees for observers. It was concerned that greater efforts were needed to increase participation in meetings by developing countries. It suggested linking the proposed Resolution on Civil Society Participation (see Item 7.3 and Resolution 2014-3 (Annex E)) with the issue of enabling a greater number of developing countries to join the IWC.

The Chair of the Commission noted that there were several Working Groups that dealt with increasing the participation of developing countries in the IWC and urged Antigua and Barbuda to join the Working Group on Providing Options to Governments with Limited Means to Participate in the Commission's Work (see Item 22.3) to ensure the necessary proposals are brought to the Commission. The Republic of Guinea noted that much of the work of the IWC is in English, which limited its participation.

The proposals under Item 7.3 of the F&A Committee, including the proposed budget with a proviso that Contracting Government contributions were increased by 0%, that media fees will be waived in future and that the observer fees will remain at its current level until 2016 were **endorsed**. The issues raised by Antigua and Barbuda and the Republic of Guinea were noted. The **agreed** budget is provided as Annex L.

23.4 Change to the timing of the Commission's financial year

23.4.1 Report of the Finance and Administration Committee

The F&A Committee recommended adoption of the proposal for the financial 'bridge' period from 1 September 2014 to 31 December 2014, resulting from the proposed alignment of the Commission's financial year with the calendar year (see Annex K, Item 7.4).

23.4.2 Commission discussions and action arising

The proposals for changing the Commission's financial year were **endorsed**.

24. ADOPTION OF COMMITTEE REPORTS

24.1 2013 Report of the Scientific Committee (SC/65a)

The Report of the 2013 Scientific Committee, IWC/65/Rep01 (2013) was **adopted** with all its recommendations.

24.2 2014 Report of the Scientific Committee (SC/65b)

The Commission **agreed** the following statement: 'There was not agreement within the Commission as to whether Agenda Item 17.1 [of the 2014 Scientific Committee Report] should be entitled 'Special Permits', with a number of Contracting Governments expressing the view that, in light of the International Court of Justice judgment of 31 March 2014, the Commission should not endorse that part of the Scientific Committee's report and noted that the following countries did not participate in the Scientific Committee discussion on this item: Argentina, Australia, Austria, Belgium, Brazil, Chile, Costa Rica, France, Germany, New Zealand, the Netherlands and the UK'.

The Report of the Scientific Committee (IWC/65/Rep01 (2014)), including the statement made in the above paragraph, was **adopted** with all its recommendations.

[34]See latest text of the Annex P process published in: *J. Cetacean Res. Manage (Suppl.)* 16: 349-353 [2015].

The present Chair of the Scientific Committee, Kitakado, thanked Scientific Committee members and Contracting Governments for their work, assistance and support. He noted that his term of office would expire after the 2015 Annual Meeting of the Scientific Committee and so he would not present the Committee's work to the Commission at IWC/66 in 2016. The Commission Chair thanked the outgoing SC Chair for his extensive work and effort within the Scientific Committee.

24.3 Report of the Working Group on Whale Killing Methods and Associated Welfare Issues
The Report of the Working Group on Whale Killing Methods and Associated Welfare Issues (Annex H) was **adopted** with all of its recommendations.

24.4 Report of the Infractions Sub-Committee
Concerns was raised during discussion of Item 18 on infractions as to whether ASW catches taken by Denmark (Greenland) since IWC/64 should be treated as infractions. The Chair stated that this was a procedural issue on Schedule amendments and should be passed to the Working Group on Operational Effectiveness, which would report back to the Commission in 2016.

The Report of the Infractions Sub-Committee (Annex I) was **adopted** with all its recommendations.

24.5 Report of the Conservation Committee
The Report of the Conservation Committee (Annex G) was **adopted** with all its recommendations.

The outgoing Chair of the Conservation Committee thanked other group chairs, the membership of the Conservation Committee and the Secretariat for their support. The Commission Chair thanked the outgoing CC Chair for his extensive work and effort within the Conservation Committee.

24.6 Report of the Aboriginal Subsistence Whaling Sub-committee
The Report of the Aboriginal Subsistence Whaling Sub-Committee (Annex F) was **adopted** with all its recommendations.

24.7 Report of the Finance and Administration Committee
The future membership of the Budgetary Sub-Committee will be: the Chair (USA), Vice-Chair (Mexico), the Republic of Guinea, Guinea-Bissau, Japan, New Zealand, Norway, Russian Federation, San Marino and the UK. In addition, one of the two open seats will be filled by Switzerland as Chair of the Commission.

The Report of the Finance and Administration Committee (Annex K) was **adopted** with all its recommendations.

25. ELECTION OF OFFICERS

25.1 Election of Chair of the Commission
Belgium highlighted its commitment to the conservation of cetaceans and noted the important role played by the Belgian Vice-Chair, Frederic Chemay, during the past two years. It announced with regret that, due to recent illness, the Vice-Chair could no longer take part in IWC/65 and Belgium had to withdraw its candidacy for the role of future Chair of the IWC[35]. Belgium offered its continued support to the Secretariat and the next Chair of the IWC in their work during the forthcoming intersessional period.

Belgium nominated Bruno Mainini (Switzerland) to be elected as Chair of the Commission, and this was seconded by Costa Rica. He was **elected by consensus**.

25.2 Election of Vice-Chair of the Commission
Norway nominated Joji Morishita (Japan) to be Vice-Chair of the Commission, which was seconded by Ghana. He was **elected by consensus**.

25.3 Election of Chair of Finance and Administration Committee
During the F&A Committee meeting, South Africa had nominated Ryan Wulff (USA) to be Chair of the F&A Committee, which was seconded by Japan.

The Commission **elected** Ryan Wulff (USA) **by consensus**. The USA thanked the outgoing Chair (Donna Petrachenko, Australia) for her six years of work.

25.4 Election of Chair of the Infractions Sub-Committee
The Commission **agreed** that Lars Walløe (Norway) will continue as Chair of the Infractions Sub-Committee.

25.5 Election of Chair of the Conservation Committee
Argentina nominated Jorge Maksabedian de la Roquette (Mexico) to be Chair of the Conservation Committee, which was seconded by Brazil. He was **elected by consensus**.

25.6 Election of Chair of the Aboriginal Subsistence Whaling Sub-Committee
The USA nominated Jeannine Compton-Antoine (St Lucia) to be Chair of the ASW Sub-Committee, which was seconded by the Russian Federation. She was **elected by consensus**.

26. BUREAU MEMBERSHIP

The Commissioners from Australia, Ghana, St Lucia, and Uruguay were **elected by consensus** to the four open seats of the Bureau. Thus the membership of the Bureau now comprises the Chair (Switzerland), Vice-Chair (Japan), Chair of the F&A Committee (USA), Australia, Ghana, St Lucia and Uruguay.

27. OTHER MATTERS

Australia suggested that the current wording regarding timing of reinstatement of voting rights in the Rules of Procedure and Financial Regulations is confusing. Specifically, it asked whether a country's vote should be reinstated during the meeting, following receipt of payment. It recommended that the F&A Committee consider this issue as soon as possible.

Argentina highlighted the importance of the work of the Scientific Committee and recommended that additional presentations from the Scientific Committee at the Commission meetings would be beneficial. Argentina indicated that it would raise this matter with the Bureau.

Iceland believed that the Commission was moving away from its core objectives, noting the continuing moratorium on commercial whaling despite scientific evidence that some whale stocks could be used sustainably. Iceland suggested that the IWC remained dysfunctional in its main aims.

[35]Sadly, after the close of the meeting the Commission was informed that Frederic Chemay passed away in October 2014.

Australia disagreed with the statement from Iceland, highlighting the progress made at IWC/65 in a spirit of respect and compromise. It noted that while there will always be some disagreement on particular issues, the IWC was operating effectively and democratically.

A presentation was given by Ecuador illustrating the development of the whalewatching industry in its country.

28. ADOPTION OF SUMMARY OF MAIN OUTCOMES, DECISIONS AND REQUIRED ACTIONS FROM THE 65TH MEETING

28.1 Adoption of summary of outcomes, decisions and required actions

The summary of main outcomes, decisions and required actions (IWC/65/Outcomes) was **adopted by consensus**. It was distributed to Commissioners, Contracting Governments and observer organisations after the close of the meeting through Circular Communication IWC.ALL.217.

28.2 Chair's closing remarks

In closing the meeting, the Chair, on behalf of herself and of the Commission, thanked the Government and people of Slovenia for their tireless work in welcoming and hosting this meeting, and the meeting of the Scientific Committee in Bled. In summarising progress made at the meeting she noted this first biennial meeting had presented a challenging agenda with a compressed timetable, and she would seek feedback from all on the process. For future meetings she will recommend a cut-off date for discussion of proposed Resolutions and changes to the Schedule, to avoid accumulation of items on the final day of the meeting. The Chair thanked everyone for the constructive approach of the meeting and the genuine commitment to the forum, and noted that every effort had been made to reach real consensus. She welcomed the substantial progress made with the adoption of amendments to the Schedule and Resolutions, the increased involvement of civil society, small type coastal whaling and whaling under Special Permits.

The Chair urged good dialogue during the forthcoming two-year period and noted the historic event of the signing of a Memorandum of Co-operation, by Japan, the Russian Federation and the USA, to progress joint actions in regard to the western North Pacific gray whales. She hoped everyone agreed that this represented progress. She noted that the IWC has a busy mandate for the intersessional period and thanked everyone who gave their time, expertise and financial support. Finally she thanked all those involved in making the meeting a success, including the hotel staff, Secretariat, interpreters, rapporteurs, NGOs, Commissioners and delegates. She wished everyone a safe journey home.

Annex A

Delegates and Observers Attending the 65th Meeting

(C) Commissioner; (AC) Alternate Commissioner; (I) Interpreter; (S) Support staff

Antigua and Barbuda
Daven Joseph (C)

Argentina
Juan Pablo Paniego (AC)
Miguel Iñíguez (AC)

Australia
Donna Petrachenko (C)
Greg Hunt (AC)
Kimberley Dripps (AC)
Yvette Blackman (AC)
William de la Mare (AC)
Wendy Black
Matthew Collis
Pam Eiser
Greg French
Michael Johnson
Gaia Puleston (S)

Austria
Andrea Nouak (C)
Michael Stachowitsch (AC)
Anke Wiedemann (S)

Belgium
Frederic Chemay (C)
Fabian Ritter (AC)
Jan Haelters

Benin
Jean-Baptiste Degbey (C)

Brazil
Katia Godinho Gilaberte (C)
Roberto Calvacanti (AC)
Paulo Rogério Gonçalves (AC)

Cambodia
Nao Thuok (C)

Cameroon
Belal Emma (C)

Chile
José Fernandez (C)
Barbara Galletti

Colombia
Elizabeth Inés Taylor Jay (AC)

Costa Rica
Eugenia Arguedas (AC)

Côte d'Ivoire
Denis Kouakou-Phieny (C)

Croatia
Ida Partl (AC)

Czech Republic
Jiri Mach (AC)

Denmark
Gitte Hundahl (C)
Ulrick Petersen (AC)
Amalie Jessen (AC)
Maj Friis Munk (AC)
Martin Mennecke
Nette Levermann
Øle Samsing
Leif Fontaine

Dominican Republic
Gilka Melendez (AC)

Ecuador
Gustavo Iturralde (AC)
Maria Eugenia Avilés
Lourdes Pereira

Estonia
Kadri Alasi (AC)

Finland
Penina Blankett (C)

France
Marie-Anne Mortelette (C)
Martine Bigan (AC)
Vincent Ridoux

Gabon
Lee White (C)

Germany
Walter Duebner (AC)
Andrea Koplin (AC)
Karl-Herman Kock

Ghana
Mike Akyeampong (C)

Grenada
Justin Rennie (C)

Guinea, Republic of
Amadou Telivel Diallo (AC)
Balla Moussa Keita (AC)
Lounseny Camara

Hungary
Zoltan Czirak (C)

Iceland
Jóhann Gudmundsson (C)
Hrund Hafsteinsdóttir (AC)
Gísli Víkingsson
Kristján Loftsson

Ireland
John Fitzgerald (C)

Israel
Rachel Oberman (C)

Italy
Riccardo Rigillo (C)
Roberto Giangreco (AC)
Caterina Fortuna (AC)
Gaetano Amato (S)
Maria Francesca Granata (S)
Maria Marotta (S)
Katerina Zoi Varfis (S)

Japan
Joji Morishita (C)
Kenji Kagawa (AC)
Tatsuo Hirayama (AC)
Hideki Moronuki (AC)
Yosuke Tsuruho
Daishiro Yamagiwa
Tadahiko Ito
Yuichiro Tamaki
Ryuji Kasai
Tomoaki Nakao
Yoichi Kimoto
Kazutaka Sangen
Takeshi Kodo
Takaaki Sakamoto
Naohito Okazoe
Tsuyoshi Koga
Toshihide Kitakado
Yoshihiro Fujise
Kayo Ohmagari
Gabriel Gomez Diaz
Glenn Inwood
Dan Goodman
Teruto Seko
Yoko Yamagake (I)
Saemi Baba (I)
Kaori Asaki (I)
Yoshihiro Takagi (I)
Brumen Polana ((I)
Shigemi Jomori
Hiroshi Abe
Akihito Teruuchi

Yuko Fujii
Takumi Kyuhara
Hiroki Kitamura
Takashi Terada
Michiko Suzuki
Daiji Kikuchi
Misato Fujii
Jasna Grgic (S)
Sandi Stepec (S)
Miha Babnik (S)

Kiribati
Reteta Rimon-Nikuata (C)

Republic of Korea
Wanhyun Choi (C)
Du Hae An (AC)
Jeongseok Park (AC)
Yong Rock An (AC)
Anna Jo (I)

Laos
Bounkhouang Khambounheuang (C)

Luxembourg
Pierre Gallego (AC)
Anna Schleimer (AC)

Mauritania
Azza Jiddou (C)

Mexico
Jorge Maksabedian de la Roquette (C)
Joel Antonio Hernández (AC)
Yolanda Aurora Alaniz Pasini

Monaco
Frederic Briand (C)
Justin Cooke

Mongolia
Dorjgurkhem Batbold (C)

Morocco
Zahra Rochdi (C)
El Aroussi Mohamed Yassine (AC)

Netherlands
Nicholaas Visser (C)
Sabine Ketele (AC)
Jorden Splinter (AC)

New Zealand
Gerard van Bohemen (C)
Jillian Dempster (AC)
Rohan Currey
David Lundquist
Anita Perkins
Alexandra Smithyman

Norway
Øle-David Stenseth (C)
Einar Tallaksen (AC)
Guri Breigutu
Egil Øen
Truls Soløy
Lars Walløe
Hild Ynnesdal
Kathrine Ryeng (S)

Oman
Abdullah Hilal Al Balushi (AC)

Panama
Margarita Zurita (C)
Gabriel Despaigne

Peru
Julissa Macchiavello (C)

Poland
Monika Lesz (C)
Bozena Kornatowska

Russian Federation
Valentin Ilyashenko (C)
Valeriy Fyodorov (AC)
Pavel Kornatskiy
Igor Mikhno (S)
Ludmila Golembievskaya (S)
Kirill Zharikov (S)
Yury Tototo (S)
Alexsei Ottoy (S)
Nikolay Ettytegin (S)
Olga Yetylina (S)
Maria Vorontsova (I)

Saint Kitts and Nevis
Marc Williams (C)

Saint Lucia
Jeannine Compton-Antoine (C)
Vaughn Charles (AC)

Saint Vincent and The Grenadines
Raymond Ryan (AC)

Slovak Republic
Zuzana Cudrakova (C)

Slovenia
Andrej Bibič (C)
Katja Piškur
Emil Ferjančič
Mojca Deželak
Tilen Genov

South Africa
Herman Oosthuizen (C)
Ed Couzens

Spain
Carmen Asencio (AC)

Sweden
Lisa Svensson (C)
Jacob Hagberg (AC)

Switzerland
Bruno Mainini (C)
Martin Krebs (AC)

Tanzania
Zahor El Kharousy (C)
Hosea Gonza Mbilinyi (AC)

Togo
Kossi Ahoedo (AC)

Tuvalu
Panapasi Nelesone (C)

UK
Nigel Gooding (C)
George Eustice (AC)
Nicola Clarke (AC)
Jamie Rendell (AC)
Donna MacKay (AC)
Beatriz Roel (AC)
Louise Savill (AC)
Emma Rundell
Mark Simmonds
Claire Bass
Amy Bell (S)

USA
Russell Smith (C)
Ryan Wulff (AC)
Doug DeMaster (AC)
Elizabeth Phelps (AC)
Melissa Garcia
Robert Brownell
Roger Eckert
Ona Hahs
Allison Reed
Michael Tillman
Greig Arnold
Harry Brower Jr.
DJ Schubert
Michael Gosliner (S)
Ira New Breast (S)
Scott Smullen (S)

Uruguay
Carlos Rodriquez Brianza (AC)
Rodrigo Garcia Pingaro

SCIENTIFIC COMMITTEE

Toshihide Kitakado (Chair)

IWC SECRETARIAT

Simon Brockington
Cherry Allison
Greg Donovan
Julie Creek
Andrea Cooke
Stella Duff
Sandra Holdsworth
David Mattila
Brendan Miller
John Parker
Dave Peers
Jessica Peers
Mark Tandy
Kate Wilson

RAPPORTEURS
Harriet Gillett
Sarah Ferriss
Tim Inskipp
Pablo Sinovas

INTERPRETERS
Cynthia Diez Menk
Elizabeth Lewis
Letitcia Saenz
Schéhérazade Matallah-Salah
Mohammed Bennis
Leila Safi

INTERGOVERNMENTAL ORGANISATION OBSERVERS

ACCOBAMS
Caterina Fortuna

COMHAFAT/ATLAFCO
Mohammed Haddad
Masaki Oikawa
Yacine Oulamine
Abdennaji Laamrich
Abdelouahed Benabbou

European Union
Jill Hanna
Luca Perez

IUCN
Justin Cooke

NAMMCO
Charlotte Winsnes

PICES
Hidehiro Kato

NON-GOVERNMENTAL ORGANISATIONS

Alaska Eskimo Whaling Commission
John Hopson
Price Leavitt
Jessica Lefevre
Robert Suydam
Christopher Winter
Taqulik Hepa

All Japan Seamen's Union
Hideo Kon
Kenji Takahashi
Kouki Tsuda

American Cetacean Society
Melanie Smith

Animal Welfare Institute
Susan Millward
Kate O'Connell
Sue Fisher
Barbara Maas

Biodiversity Action Network East Asia (BANEA)
Ayako Okubo
Atsushi Ishii
Yashiro Sanada
Mari Koyano

Blue Voice.Org
Hardy Jones
Deborah Cutting

Campaign Whale
Andy Ottaway
Samantha Dawes
Elleke van Renesse
Geert Drieman

Centro de Conservacion Cetacea
Elsa Cabrera
Jose Truda Palazzo Jr.
Maria Jimenez
Javier Rodriquez Fonseca

Cetacean Society International
Heather Rockwell

Conservación de Mamíferos Marinos de México A.C (Comarino)
Mercedes Anzures

Dolphin Connection
Deborah Adams
Paul Spong
Helena Symonds
Nancy Azzam

Dolphin and Whale Action Network
Nanami Kurasawa

Eastern Caribbean Coalition for Environmental Awareness (ECCEA)
Marlon Mills

Environmental Investigation Agency
Jennifer Lonsdale
Danielle Grabiel
Clare Perry
Allan Thornton

European Bureau for Conservation and Development (EBCD)
Despina Symons

Fundacion Cethus
Carolina Cassani

Global Guardian Trust
Toshikazu Miyamoto

Greenpeace International
Rathana Chea
Yuki Sekimoto
Kazue Komatsubara
John Frizell
Phil Kline
Milko Schwartzman

Humane Society International
Alexia Wellbelove
Kitty Block
Bernard Unti
Rebecca Regenery

Instituto de Conservacion de Ballenas
Roxana Schteinbarg
Miguel Botazzi

International Fund for Animal Welfare
Patrick Ramage
Clare Sterling
Vassili Papastavrou
Naoko Funahashi
Ralf Sonntag
Sidney Holt
Sonja Van Tichelen
Darren Kindleysides

IWMC World Conservation Trust
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Joanna Massiah
Gavin Carter

Japan Whaling Association
Makoto Ito
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Hisashi Hamaguchi
Hayato Sakurai
Ichiro Wada
Masaki Wada
Haruki Murakami
Noboru Tamura
Taijiro Murakami
Naoya Tanikawa
Seiji Ankyu

Japan Small-Type Whaing Association
Yoshiichi Shimomichi
Chikao Kimura

Makah Indian Tribe
Brian Gruber
Keith Johnson

OceanCare
Sigrid Lueber

Pacific Orca Society
Anique Hoekstra
Myriam Vanderzwalmen

Pro Wildlife
Sandra Altherr

Society for the Conservation of Marine Mammals, Danish Section
Birgith Sloth

University of Tasmania, Faculty of Law
Lucy de Vreeze

Whale and Dolphin Conservation Society
Vanesa Tossenberger
Astrid Fuchs

Whaleman International Ltd
Jeff Pantukhoff

Whales Alive
Mick McIntyre

Women's Forum for Fish
Akiko Sato
Sho Okubo

World Animal Protection
Joanna Toole

WWF International
Leigh Henry
Sarah Goddard
Aimee Leslie
Alona Rivord

Annex B

Agenda

1. INTRODUCTORY ITEMS
   - 1.1 Welcome address
   - 1.2 Opening Statements
   - 1.3 Secretary's Report on Credentials and Voting Rights
   - 1.4 Meeting arrangements
   - 1.5 Review of documents
2. ADOPTION OF THE AGENDA
3. SCIENTIFIC COMMITTEE PRESENTATION
4. ABORIGINAL SUBSISTENCE WHALING
   - 4.1 Aboriginal Subsistence Whaling Management Procedure
     - 4.1.1 Report of the Aboriginal Subsistence Whaling Sub-Committee
       - Progress with the development of *SLA*s for the Greenland subsistence whaling
       - *Implementation Review* for gray whales
     - 4.1.2 Commission discussions and action arising
   - 4.2 Aboriginal Whaling Scheme
     - 4.2.1 Report of the Aboriginal Subsistence Whaling Sub-Committee
     - 4.2.2 Commission discussions and action arising
   - 4.3 Report of the *Adhoc* Aboriginal Subsistence Whaling Working Group
   - 4.4 Annual reviews of aboriginal subsistence whaling catch limits
     - 4.4.1 Bering-Chukchi-Beaufort Seas stock of bowhead whales
     - 4.4.2 Commission discussions and action arising
     - 4.4.3 North Pacific eastern stock of gray whales
     - 4.4.4 Commission discussions and action arising
     - 4.4.5 Common minke whale stocks off east and west Greenland
     - 4.4.6 Commission discussions and action arising
     - 4.4.7 West Greenland stock of fin whales
     - 4.4.8 Commission discussions and action arising
     - 4.4.9 West Greenland stock of bowhead whales
     - 4.4.10 Commission discussions and action arising
     - 4.4.11 Humpback whales off West Greenland
     - 4.4.12 Commission discussions and action arising
     - 4.4.13 North Atlantic humpback whales off St Vincent and The Grenadines
     - 4.4.14 Commission discussions and action arising
   - 4.5 Proposals for aboriginal subsistence whaling catch limits
     - 4.5.1 Proposal to establish Greenland catch limits
     - 4.5.2 Report of the Aboriginal Subsistence Whaling Sub-Committee
     - 4.5.3 Commission discussions and action arising
5. SANCTUARIES
   - 5.1 South Atlantic Whale Sanctuary
     - 5.1.1 Proposal for the establishment of a South Atlantic Whale Sanctuary
     - 5.1.2 Report of the Conservation Committee
     - 5.1.3 Commission discussions and action arising
   - 5.2 Southern Ocean Sanctuary decadal review
     - 5.2.1 Report of the Conservation Committee
     - 5.2.2 Commission discussions and action arising
6. SOCIO-ECONOMIC IMPLICATIONS AND SMALL TYPE WHALING
   - 6.1 Commission discussions and action arising
7. RESOLUTIONS
   - 7.1 Proposed Resolution Concerning Small Cetaceans on the High Seas
8. THE IWC IN THE FUTURE
   - 8.1 Commission discussion and action arising
9. WHALE STOCKS
   - 9.1 Antarctic minke whales
   - 9.2 Southern Hemisphere humpback whales
   - 9.3 Southern Hemisphere blue whales
   - 9.4 Western North Pacific gray whales
   - 9.5 Southern Hemisphere right whales
   - 9.6 North Pacific and North Atlantic right whales and small stocks of bowhead whales
   - 9.7 International research cruises
   - 9.8 Other stocks
10. CONSERVATION COMMITTEE
    - 10.1 Investigation of inedible 'stinky' gray whales
      - 10.1.1 Report of the Conservation Committee
      - 10.1.2 Commission discussions and action arising
    - 10.2 Ship strikes
      - 10.2.1 Report of the Conservation Committee
      - 10.2.2 Commission discussions and action arising
    - 10.3 Southern right whales of Chile-Peru
      - 10.3.1 Report of the Conservation Committee
      - 10.3.2 Commission discussions and action arising
    - 10.4 National Reports on Cetacean Conservation
      - 10.4.1 Report of the Conservation Committee
      - 10.4.2 Commission discussions and action arising
    - 10.5 Marine debris
      - 10.5.1 Report of the Conservation Committee
      - 10.5.2 Commission discussions and action arising
11. CONSERVATION MANAGEMENT PLANS
    - 11.1 Western Pacific gray whale
      - 11.1.1 Report of the Conservation Committee
      - 11.1.2 Commission discussions and action arising
    - 11.2 Southwest Atlantic southern right whale
      - 11.2.1 Report of the Conservation Committee
      - 11.2.2 Commission discussions and action arising
    - 11.3 Southeast Pacific southern right whale
      - 11.3.1 Report of the Conservation Committee
      - 11.3.2 Commission discussions and action arising
    - 11.4 Additional CMP proposals
      - 11.4.1 Developing a list of priority species for CMPs
      - 11.4.2 Development of threat-based CMPs
      - 11.4.3 Commission discussions and action arising
    - 11.5 Strategic planning
      - 11.5.1 Working with IGOs, NGOs and others to develop and deliver CMPs
      - 11.5.2 CMP strategic plan
    - 11.6 Progress Report by the CMP Standing Working Group
    - 11.7 Commission discussions and action arising

12. WHALEWATCHING
12.1 Report of the Conservation Committee
12.2 Commission discussions and action arising

13. WHALE KILLING METHODS AND ASSOCIATED WELFARE ISSUES
13.1 Summary of data provided on whales killed
13.2 Improving the humaneness of whaling operations
13.3 Welfare issues associated with the entanglement of large whales
13.4 Whale welfare
13.4.1 Report of the Workshop on Euthanasia Protocols
13.4.2 Commission discussions and action arising
13.4.3 Progress update from the *adhoc* Intersessional Working Group on Welfare
13.4.4 Commission discussions and action arising

14. REVISED MANAGEMENT PROCEDURE (RMP)
14.1 Commission discussions and action arising

15. SCIENTIFIC PERMITS AND OTHER RELATED ITEMS
15.1 Implications for the IWC of a recent case before the International Court of Justice entitled 'Whaling in the Antarctic: Australia *vs* Japan; New Zealand intervening'
15.1.1 Introduction by the parties to the case
15.1.2 Commission discussion and action arising
15.2 Review of results from existing permits
15.2.1 Expert scientific review of results from existing permits
• Annex P review of the Icelandic research programme 2003-07
• Annex P review of JARPA II
15.2.2 Review of results from existing permits
• JARPN II
15.3 Review of new or continuing proposals
15.3.1 Planning for an Annex P review of JARPN II
15.3.2 Future Japanese special permits in the Antarctic
15.4 Procedures for reviewing scientific permit proposals
15.5 Other

16. SAFETY AT SEA

17. CATCHES BY NON-MEMBER NATIONS
17.1 Commission discussions and action arising

18. INFRACTIONS, 2012 and 2013 SEASON
18.1 Report of the Infractions Sub-Committee
18.2 Commission discussions and action arising

19. ENVIRONMENTAL AND HEALTH ISSUES
19.1 State of the Cetacean Environment (SOCER)
19.2 POLLUTION 2000+ research programme
19.3 Cetacean diseases
19.4 Anthropogenic sound
19.5 Climate change
19.6 Other habitat-related issues
19.7 Ecosystem modelling
19.8 Health issues
19.9 Other

20. OTHER SCIENTIFIC COMMITTEE ACTIVITIES
20.1 Small cetaceans
20.1.1 Commission discussions and action arising
20.2 Regional non-lethal research partnerships
20.2.1 Commission discussions and action arising
20.3 Working methods of the Committee
20.3.1 Commission discussions and action arising
20.4 Other activities
20.4.1 Commission discussions and action arising

21. CO-OPERATION WITH OTHER ORGANISATIONS
21.1 Commission discussions and action arising

22. FINANCE AND ADMINISTRATION
22.1 Meeting arrangements and procedures
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• Need for a Technical Committee
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- Report on measures to adjust financial regulations to assist Contracting Governments in arrears of payments

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10rev3	Resolution on Food Security (submitted by Ghana, Côte d'Ivoire, Mali, Republic of Guinea and Benin)	7
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12	Draft Resolution on Civil Society Participation and Transparency at the IWC (submitted by Chile)	7
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12rev2	Resolution on Civil Society Participation and Transparency at the IWC (submitted by Chile, Argentina, Brazil, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay)	7
12rev3	Resolution on Civil Society Participation and Transparency at the IWC (submitted by Chile, Argentina, Brazil, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay)	7
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13rev4	Resolution on the Scientific Committee (submitted by Chile, Argentina, Brazil, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay)	7
14	Draft Resolution for IWC/65: Whaling under Special Permit (submitted by New Zealand)	7
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16	Proposed Schedule Amendment for Greenland Aboriginal Subsistence Whaling (submitted by Denmark)	4
17	Utilization of large whales in Greenland - a need statement (submitted by Denmark)	5
18	Catches by IWC member nations in the 2012 and 2013 seasons (prepared by the Secretariat)	5
19	International Court of Justice – summary judgment (submitted by Australia and New Zealand)	15.1
20	International Court of Justice – full judgment (submitted by Australia and New Zealand)	15.1
20rev1	International Court of Justice – full judgment (submitted by Australia, Japan and New Zealand)	15.1
21	Additional information to IWC/65/09 (Japan's proposal and its background for Schedule amendment to permit the catching of minke whales from the Okhotsk Sea-West Pacific stock by small-type coastal whaling vessels) (submitted by Japan)	6
22	ICJ judgement (submitted by Japan)	15.1

IWC/65		Agenda Item
23	Montevideo Declaration (submitted by Uruguay)	5.1
23rev1	Montevideo Declaration [extract] (submitted by Uruguay)	5.1
24	Short overview of the work of the Scientific Committee as its 2013 and 2014 Annual Meetings (submitted by the Chair and Vice-Chair of the Scientific Committee and the IWC Head of Science)	3
25	Proposal by the Commissioner of Uruguay: Minamata Convention as a Tool for Addressing Conservation Issues	19.8
25rev1	Proposal by the Commissioner of Uruguay: Minamata Convention as a Tool for Addressing Conservation Issues	19.8
26	Joint Statement by Mexico and the United States on the Plight of the Vaquita	20.4
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IWC/65/Rep		Agenda Item
01(2013) 01(2014)	Report of the Scientific Committee (2013) Report of the Scientific Committee (2014)	3
02	Report of the Finance and Administration Committee	22
03	Report of the Aboriginal Subsistence Whaling Sub-Committee	4
04	Report of the Infractions Sub-committee	18
05	Report of the Conservation Committee	10
05rev1	Report of the Conservation Committee	10
05rev2	Report of the Conservation Committee	10
06	Report of the Working Group on Whale Killing Methods and Associated Welfare Issues	13
07	Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic	
07rev1	Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic	

Summary documents available in French and Spanish

IWC/65/	
Rep01 -FR or SP	Summary of outcomes of IWC/65/Rep01 (Reports of the Scientific Committee 2013 and 2014)
Rep02 -FR or SP	Summary of outcomes of IWC/65/Rep02 (Report of the Finance and Administration Committee)
Rep03 -FR or SP	Summary of outcomes of IWC/65/Rep03 (Report of the Aboriginal Subsistence Whaling Sub-Committee)
Rep04 -FR or SP	Summary of outcomes of IWC/65/Rep04 (Report of the Infractions Sub-Committee)
Rep05 -FR or SP	Summary of outcomes of IWC/65/Rep05 (Report of the Conservation Committee)
Rep06 -FR or SP	Summary of outcomes of IWC/65/Rep06 (Report of the Working Group on Whale Killing Methods and Associated Welfare Issues)

OPENING STATEMENTS

IWC/65/OS GO (Member Governments)
Australia
Denmark
Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay (members of the Grupo Buenos Aires)
Italy (on behalf of the EU and its Member States)
Japan
Korea
New Zealand
USA

IWC/65/OS IGO (Inter-Governmental Observers)
IUCN
NAMMCO

IWC/65/OS NGO (Non-Governmental Observers)	
AWI	Animal Welfare Institute
Campaign Whale	Campaign Whale
CMS Family	Convention on the Conservation of Migratory Species
COMARINO	Conservación de Mamíferos Marinos de México A.C.
GGT	Global Guardian Trust
Greenpeace	Greenpeace International
HSI	Humane Society International
IWMC	IWMC World Conservation Trust
JSTWA	Japan Small Type Whaling Association
ORCA	ORCA
WWF	WWF International

Annex D

Interventions by Ministers

MR GREG HUNT

The Minister for Environment of the Government of Australia, Mr Greg Hunt, thanked the Government of Slovenia for its hospitality. He noted that this IWC meeting provides the first opportunity to consider the ruling of International Court of Justice on whaling in the Antarctic which concluded that JARPA II was not for purposes of scientific research, an outcome that Australia welcomed. He drew attention to the positive relationship between Australia and Japan, noting their differing opinions on this issue. He commended the Resolution on Whaling under Special Permit as proposed by New Zealand, fully supported the proposal of a Sanctuary in the South Atlantic, and reflected on the threats posed by ships strikes and bycatch. He drew attention to the third International Conference on Marine Mammal Protected Areas that will be held in Adelaide in November 2014 and welcomed countries to attend. He concluded by noting his strong support for a global moratorium on commercial whaling and the need to make every effort to protect whales.

MR GEORGE EUSTICE

The Minister for Farming, Food and the Marine Environment of the Government of the United Kingdom, Mr George Eustice reiterated the UK's strong support for the moratorium. He stated that better and more sustainable methods than hunting exist for utilising whale resources and that these can support development of local communities socially, economically and environmentally. He noted that sanctuaries are integral to this and besides providing ecological benefits can be a stimulus for research and contribute to whalewatching, hence the UK is fully in support of the proposal to establish a South Atlantic Sanctuary. He said the UK supported the efforts of the IWC towards healthy whale populations, which are worth more to us when alive. He noted that the IWC has the world's best knowledge on cetaceans and hoped that despite some differences, work on marine debris, ship strikes and small cetaceans would continue.

M. LOUSENY CAMARA

The Minister for Fisheries and Aquaculture of the Republic of Guinea, M. Louseny Camara thanked the Slovenian Government for hosting the meeting and noted that the Republic of Guinea has been a member of the IWC since 2000. He highlighted the issues facing the planet, including an increasing population and suffering as a result of hunger. He urged the IWC to take appropriate measures to address these concerns, giving special attention to the requirement for food security.

Annex E

Resolutions Adopted at the 65th Meeting

Resolution 2014-1

RESOLUTION ON ABORIGINAL SUBSISTENCE WHALING (AWS)

WHEREAS Resolution 1982-3 states that it is the purpose of the International Whaling Commission (IWC) to provide for the effective conservation and management of whale stocks;

WHEREAS the Commission recognises the importance of accommodating the needs of aboriginal people who are dependent upon whales for subsistence and cultural purposes and that the Commission intends that the needs of aboriginals shall be determined by the Governments concerned and explained in needs statements that are submitted to the Commission;

WHEREAS Aboriginal Subsistence Whaling (ASW) management is a fundamental and integral part of the duties to be performed by the IWC;

WHEREAS Resolution 1994-4 states that for aboriginal subsistence whaling the IWC objectives are to:

(a) ensure that the risks of extinction to individual stocks are not seriously increased by subsistence whaling;
(b) enable aboriginal people to harvest whales in perpetuity at levels appropriate to their cultural and nutritional requirements, subject to the other objectives; and
(c) maintain the status of stocks at or above the level giving the highest net recruitment and to ensure that stocks below that level are moved towards it, so far as the environment permits;

WHEREAS Resolution 1994-4 also states that highest priority shall be accorded to the objective of ensuring that the risk of extinction to individual stocks are not seriously increased by subsistence whaling;

WHEREAS the Scientific Committee in its 2009 report endorsed an interim safe approach to setting catch limits for the Greenlandic hunt in 2008 and agreed that this should be considered valid for two blocks, i.e. up to, and including, the 2018 whaling season;

WHEREAS the Commission and the Scientific Committee have agreed that long-term scientific advice on ASW management should follow the *Strike Limit Algorithm (SLA)* approach;

WELCOMING the relevant work carried out by the Scientific Committee, especially the considerable progress in developing *SLA*s and providing management advice for the Greenlandic hunt;

NOTING WITH SATISFACTION the completion of the *SLA* for humpback whales off West Greenland which provides a more robust basis for providing long-term management advice to the Commission on the subsistence hunt of humpback whales off West Greenland;

WELCOMING ALSO the work of the Scientific Committee towards considering a multi-species *SLA*;

WELCOMING FURTHER the additional work undertaken on conversion factors within Greenland, including improved procedures for data collection and updating the new information obtained (SC/65b/AWMP05[1]) in line with the recommendations of the Scientific Committee in 2013 and **NOTING** that the Scientific Committee has agreed that annual update reports are unnecessary for its work, but has suggested that data are submitted directly to the Commission when it meets and incorporated as necessary into need statements;

NOW, THEREFORE, THE COMMISSION:

(a) **EMPHASISES** the need to regulate ASW in the future through a more consistent and long-term approach;
(b) **URGES** all Contracting Governments to participate more actively in the work of the ASW Sub-Committee;
(c) **REQUESTS** the Scientific Committee to give high priority to all AWMP-related activities, including modelling and data collection and to complete, and, to the extent possible, accelerate its work on the development of agreed and validated *SLA*s for the Greenland hunt, at least by species, before 2018 in accordance with its current work plan as well as consider the integration of these *SLA*s so as to provide multispecies advice for the next quota period;
(d) **FURTHER REQUESTS** the ASW Sub-Committee to address as a matter of urgency the following issues for the period 2014-18:
    (i) standardised need statements, building on the work already carried out in the ASW Sub-Committee and by the *Ad-Hoc* ASW Working Group;
    (ii) better understanding of the relationship between needs and consumption patterns for ASW hunts, including by collecting data on landings for each category, local consumption and use and the extent of monetary transactions; and
    (iii) preparation of a proposal to update paragraph 13(a) of the Schedule to the International Convention on the Regulation of Whaling to reflect the *SLA* approach for consideration by IWC/66.
(e) **THANKS** the Kingdom of Denmark for providing the updated 2014 needs statement for Greenland; and
(f) **INVITES** the ASW countries to continue to provide regular data and improve information on all aspects of their hunts and needs.

[1]Simon, M. 2014. Progress on conversion factors for the Greenlandic hunt. Paper SC/65b/AWMP05 presented to the IWC Scientific Committee, May 2014, Bled, Slovenia (unpublished). 10pp. [Paper available from the Office of this Journal].

Resolution 2014-2

RESOLUTION ON HIGHLY MIGRATORY CETACEANS

NOTING that nearly all marine cetacean species[1] are highly migratory and thus critically dependent on international cooperation for their conservation and management;

RECALLING that the ICRW Schedule currently lists management measures for only 17 of these species;

NOTING that Articles 65 and 120 of the United Nations Convention on the Law of the Sea provide that States shall cooperate with a view to the conservation of marine mammals and, in the case of cetaceans, work through the appropriate international organisations for their conservation, management and study both within and beyond the exclusive economic zone;

RECOGNISING that efforts by coastal States to protect these migratory species depend upon concerted, additional conservation efforts on the High Seas;

NOTING further that for the majority of cetacean species the main conservation threats involve factors, such as entanglement, marine debris and traffic, that cannot be solved through IWC action alone, but require the co-operation of other relevant organisations;

NOW, THEREFORE, THE COMMISSION:

DECIDES to seek enhanced collaboration in the conservation of migratory cetaceans with other intergovernmental organisations whose co-operation is essential to secure the lasting protection of these species in the world ocean;

REQUESTS the Secretariat to conduct consultations and develop a draft work plan with regard to sharing of data and research priorities;

INVITES Contracting Parties to raise the need for increased international collaboration regarding highly migratory cetaceans in relevant international fora, with a view to contributing to the conservation efforts of the IWC; and

DECIDES to review progress at the 66th Meeting of the Commission.

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[1]The most recent list used by the IWC Scientific Committee includes 88 species of cetaceans of which 81 are marine or mainly marine. Of the marine species, all but seven belong to the families listed as Highly Migratory in Annex I of the UN Convention on the Law of the Sea. *Source: J. Cetacean Res. Manage.* 13(1): x-xi [2013].

Resolution 2014-3

RESOLUTION ON CIVIL SOCIETY PARTICIPATION AND TRANSPARENCY AT THE IWC

NOTING that Principle 10 of the Rio Declaration calls upon States to, *inter alia*, 'facilitate and encourage public awareness and participation by making information widely available';

RECALLING the importance of transparency in international environmental agreements;

RECOGNISING the valuable contributions of observers to meetings of the International Whaling Commission;

FURTHER recalling Resolution 2011-1 on improving the effectiveness of operations within the International Whaling Commission;

AWARE that during the last decade international law and practice relating to transparency and participation in international decision-making has continued to develop, with the coming into force of relevant conventions at the global and regional level;

MINDFUL of the good practices adopted by the Commission to facilitate NGO participation since 2007;

CONVINCED that advances made in NGO participation can be further enhanced without placing administrative burdens on member governments, the Secretariat or committees of the Commission;

DETERMINED that Commission procedures for NGO participation should be brought into line with current international good practice so as to improve the transparency and governance of the organisation;

NOW, THEREFORE, THE COMMISSION:

REAFFIRMS the important role of civil society participation in its proceedings and in ensuring that the IWC remains an open, transparent and fully accountable organisation; and

ADOPTS the amendments to the Rules of Procedure of the Commission contained in the Annexes to this Resolution.

Annex A

CHANGES TO THE RULES OF PROCEDURE OF THE INTERNATIONAL WHALING COMMISSION

These amendments are shown as changes to the Rules of Procedure and Financial Regulations as adopted at the 64th Annual Meeting (*http://iwc.int/document_2385.download*). New text for inclusion is in bold italics; old text for deletion is struck out.

B. Meetings

1. The Commission shall hold a regular [ ] Biennial Meeting in such place as the Commission may determine. Any Contracting Government desiring to extend an invitation to the Commission to meet in that country shall give formal notice two years in advance. A formal offer should include:
   (a) which meetings it covers, i.e. Scientific Committee, Commission sub-groups, [ ] Biennial Commission Meeting;
   (b) a proposed time window within which the meeting will take place; and
   (c) a timetable for finalising details of the exact timing and location of the meeting.

   Attendance by a majority of the members of the Commission shall constitute a quorum. Special Meetings of the Commission may be called at the direction of the Chair after consultation with the Contracting Governments and Commissioners.
2. Before the end of each [ ] Biennial Meeting, the Commission shall decide on: (1) the length of the next [ ] Biennial Commission Meeting and associated meetings [ ]; and (2) which of the Commission's sub-groups need to meet.
3. The Scientific Committee shall meet annually. Other committees and sub-committees shall meet biennially, prior to the meeting of the Commission. However, this does not preclude intersessional work by these committees and sub-groups from continuing.
4. The Bureau shall meet in those years in which the Commission does not meet, and shall otherwise meet as required to fulfill its functions in accordance with Rule M.9***. The Chair may invite Contracting Governments who are not members of the Bureau, as appropriate, to attend in-person Bureau meetings.***

C. Observers

1. (a) Any Government not a party to the Convention or any intergovernmental organisation may be represented at meetings of the Commission by an observer or observers, if such non-party government or intergovernmental organisation has previously attended any meeting of the Commission, or if it submits its request in writing to the Commission 60 days prior to the start of the meeting, or if the Commission issues an invitation to attend.
   (b) Any non-governmental organisation which expresses an interest in matters covered by the Convention may be accredited as an observer. Requests for accreditation must be submitted in writing to the Commission 60 days prior to the start of the meeting and the Commission may issue an invitation with respect to such request. Such submissions shall include the standard application form for non-governmental organisations, which will be provided by the Secretariat. These applications shall remain available for review by Contracting Governments.

   Once a non-governmental organisation has been accredited through the application process above, it will remain accredited until the Commission decides otherwise.

Observers from each non-governmental organisation will be allowed seating in the meeting. However, seating limitations may require that the number of observers from each non-governmental organisation be limited. The Secretariat will notify accredited non-governmental organisations of any seating limitations in advance of the meeting.

(c) The Commission shall levy a registration fee and determine rules of conduct, and may define other conditions for the attendance of observers accredited in accordance with Rule C.1.(a) and (b). The registration fee will cover attendance at the Biennial Commission Meeting to which it relates and any other meetings of the Commission or its subsidiary groups as provided in Rule C.2 in the interval before the next Biennial Commission Meeting.

2. Observers accredited in accordance with Rule C.1.(a) and (b) are admitted to all meetings of the Commission and the Technical Committee, and to any meetings of Committees and all subsidiary groups of the Commission and the Technical Committee, except the Commissioners-only meetings, meetings of the Bureau and closed meetings of the Finance and Administration Committee.

3. Observers accredited in accordance with rule C.1.(a) and (b) will have speaking rights during Plenary sessions and sessions of Commission subsidiary groups and Committees to which they are admitted to under C.2, in accordance with the Rules of Debate of the Commission. Observers might also submit documents for information to the delegations and observers participating in such sessions, provided these are submitted through the Secretariat at least 48 hours before the session in which they are intended to be made available, and are duly authored or endorsed by the accredited organisation making the submission, which is to be held responsible for its contents.

(…)

M. Committees

. . .

8. The Finance and Administration Committee shall advise the Commission on expenditure, budgets, scale of contributions, financial regulations, staff questions, and such other matters as the Commission may refer to it from time to time. ***The Chair of the Finance and Administration Committee may close to observers at his or her discretion, portions of meetings of the Committee during which sensitive matters such as personnel questions will be discussed.***

(...)

P. Reports and communications

1. Commissioners should arrange for reports on the subject of whaling published in their own countries to be sent to the Commission for record purposes.
2. The Chair's Report of the most recent Biennial Commission Meeting or Meeting of the Bureau shall be posted on the Commission's public website in English within two months of the end of the meeting and in the other working languages as soon as possible thereafter. It shall be published in the Annual Report of the year just completed.
3. All individual and circular communications from the Chair or Secretary to Contracting Governments shall be sent to both the Commissioner appointed under Rule A.1., and to his/her Alternate designated or to the focal or contact point created under Rule A.2. They should also be sent to all accredited ~~intergovernmental~~ observers. All circular communications from the Chair or Secretary to Contracting Governments shall be posted on the Commission's public website on despatch, unless the Chair, after consulting with the Bureau, deems that a confidential communication is warranted (applicable only for staff issues, infraction cases and information provided by Contracting Governments with a request that it remain confidential), in which case the communication should be sent to the Contracting Governments alone. A list of dates and subject titles of such confidential communications shall be presented to the next Biennial Meeting or to the Bureau in years when the Commission does not meet.

Annex B

CHANGES TO THE RULES OF DEBATE OF THE INTERNATIONAL WHALING COMMISSION

These amendments are shown as changes to the Rules of Procedure and Financial Regulations as adopted at the 64th Annual Meeting (*http://iwc.int/document_2385.download*).

New text for inclusion is in ***bold italics***; old text for deletion is ~~struck out~~.

A. Right to Speak

1. The Chair shall call upon speakers in the order in which they signify their desire to speak***, with the exception of accredited Observers, which should be allowed to speak only after all Commissioners desiring to speak do so. As a general rule, Observers will only be allowed to speak once at each Agenda item under discussion, and at the discretion of the Chair.***
2. A Commissioner or Observer may speak only if called upon by the Chair, who may call a speaker to order if his/her remarks are not relevant to the subject under discussion.

Resolution 2014-4

RESOLUTION ON THE SCIENTIFIC COMMITTEE

NOTING reiterated concerns expressed in relation to the conservation status and the increasing threats that various cetacean stocks are facing;

RECALLING Resolution 2003-1 on the Berlin Initiative on Strengthening the Conservation Agenda of the International Whaling Commission;

FURTHER RECALLING more than fifty Resolutions of the International Whaling Commission addressing the work of the Scientific Committee[1], particularly regarding the increasing and evolving work over decades on conservation aspects, including small cetaceans;

RECOGNISING the value of the Scientific Committee's work on these conservation issues for the Commission and the Conservation Committee;

NOTING that the Scientific Committee has been discussing aspects related to increasing the support of the Scientific Committee on conservation related issues and has agreed, *inter alia*, to improve communication with the Commission and keep track of recommendations;

FURTHER NOTING that the work of the Scientific Committee oriented toward issues related to other threats than direct takes, has increased over the last decades but has received little funding;

AWARE of the different views between member states on the regulatory competence of the IWC with regard to small cetaceans;

BELIEVING that Commission procedures for the Scientific Committee should be updated to reflect its breadth of work over the last decades;

NOW, THEREFORE, THE COMMISSION:

DIRECTS the Scientific Committee to continue to improve its work towards conservation-related matters including an increasing allocation of funding for conservation oriented research, such as investigation on conservation or mitigation measures, while taking into consideration other core activities as provided for by the Convention;

AGREES to establish a working group between the Conservation Committee and the Scientific Committee in order to propose a procedure to facilitate the implementation and follow-up of conservation recommendations;

DIRECTS the Working Group on Operational Effectiveness and Cost Saving Measures to provide for closer engagement of the Commission in the setting of the Scientific Committee's work plans by formulating advice to the Scientific Committee on:

- research priorities and any specific scientific advice the Commission may require at its next meeting; and
- the Scientific Committee's two-year detailed work plans particularly where it will assist the Scientific Committee in scheduling activities and reporting over its two following annual meetings;

REQUESTS the Scientific Committee, including its sub-committees and working groups, to improve reporting efficiency by providing consolidated reports covering the two-year intersessional period wherever possible.

INSTRUCTS the Secretariat to annually prepare a compilation of concerns and recommendations expressed by the Scientific Committee related to conservation aspects and to forward it to contracting and non-contracting governments, intergovernmental organisations and other entities as appropriate, at the same time drawing their attention to any particular advice contained therein and offering more detailed advice if that should be sought;

ADOPTS the amendments to the Rules of Procedure of the Commission contained in the Annex II to this Resolution;

FORWARDS to the Scientific Committee the proposed amendments to the Rules of Procedures of the Scientific Committee in Annex III for their consideration, with a view to adopting amended rules at the Commission's next meeting after considering advice from the Scientific Committee; and

CONSOLIDATES the mandate of the Small Cetaceans Standing Sub-Committee by adopting the following terms of reference:

- review the distribution and stock structure of small cetaceans;
- review information on the status of the stocks of small cetaceans and provide an assessment of the threats to the stocks concerned;
- advice on ways in which those threats can be eliminated or mitigated;
- review developments on topics and recommendations that were subject of previous reports; and
- coordinate with other Scientific Committee sub-committees and working groups, where appropriate, to further address topics related to environmental concerns, whale watching, RMP, AWMP, human induced mortality, among others.

[1]Annex I: Compiled list of IWC Resolutions addressing the work of the Scientific Committee 1976-2012.

Annex I

COMPILED LIST OF IWC RESOLUTIONS ADDRESSING THE WORK OF THE SCIENTIFIC COMMITTEE 1976-2012

IWC 31st Annual Meeting
- 1979-3 Resolution in relation to the establishment of a whale sanctuary in the Indian Ocean.

IWC 32nd Annual Meeting
- 1980-6 Resolution aimed at discouraging whaling operations outside IWC regulations.
- 1980-8 Resolution concerning extension of the Commission's responsibility for small cetaceans.

IWC 33rd Annual Meeting
- 1981-7 Resolution relating to pollutants in whales.

IWC 38th Annual Meeting
- 1986-2 Resolution on special permit for scientific research[2].

IWC 39th Annual Meeting
- 1987-1 Resolution on scientific research programmes.

IWC 42nd Annual Meeting
- 1990-3 Resolution on small cetaceans.

IWC 43rd Annual Meeting
- 1991-4 Resolution on the Revised Management Procedure.
- 1991-5 Resolution on small cetaceans.

IWC 44th Annual Meeting
- 1992-2 Resolution on the need for research on the environment and whale stocks in the Antarctic region.
- 1992-3 Resolution on the Revised Management Scheme.
- 1992-4 Resolution on a sanctuary in the Southern Hemisphere.

IWC 45th Annual Meeting
- 1993-4 Resolution on addressing small cetaceans in the IWC.
- 1993-5 Resolution on research related to conservation of large baleen whales in the Southern Oceans.
- 1993-12 Resolution on research on the environment and whale stocks.

IWC 46th Annual Meeting
- 1994-2 Resolution on small cetaceans.
- 1994-4 Resolution on a review of Aboriginal Subsistence Management Procedures.
- 1994-5 Resolution on the Revised Management Scheme.
- 1994-8 Resolution on scientific permits.
- 1994-12 Resolution on promotion of research related to conservation of large baleen whales in the Southern Oceans.
- 1994-13 Resolution on research on the environment and whale stocks.
- 1994-14 Resolution on whalewatching.

IWC 47th Annual Meeting
- 1995-7 Resolution on surveys intended to provide abundance estimates for the implementation of the Revised Management Scheme
- 1995-9 Resolution on whaling under special permit[3].

IWC 48th Annual Meeting
- 1996-2 Resolution on whalewatching.
- 1996-4 Resolution on small cetaceans.
- 1996-6 Resolution of provisions for completing the Revised Management Scheme.
- 1996-8 Resolution on environmental change and cetaceans.

[2]Resolutions replaced afterwards by Resolution 1995-9.
[3]Resolution on whaling under special permit that replace resolutions 1986-2 and 1987-1.

IWC 49th Annual Meeting
- 1997-5 Resolution on special permit catches in the Southern Ocean by Japan.
- 1997-7 Resolution on environmental change and cetaceans.
- 1997-8 Resolution on small cetaceans.

IWC 50th Annual Meeting
- 1998-2 Resolution on total catches over time.
- 1998-3 Resolution on the Southern Ocean Sanctuary.
- 1998-4 Resolution on whaling under special permit.
- 1998-5 Resolution on environmental changes and cetaceans.
- 1998-10 Resolution to consider establishment of a mechanism to improve communications between the Commission and its Scientific Committee.

IWC 51st Annual Meeting
- 1999-2 Resolution on special permits for scientific research.
- 1999-4 Resolution on health effects from the consumption of cetaceans.
- 1999-5 Resolution for the funding of high priority scientific research.
- 1999-7 Resolution on small populations of highly endangered whales.
- 1999-8 Resolution on DNA testing.
- 1999-9 Resolution on Dall's porpoise.

IWC 52nd Annual Meeting
- 2000-7 Resolution on environmental change and cetaceans.
- 2000-8 Resolution on western North Atlantic right whales.

IWC 53rd Annual Meeting
- 2001-3 Resolution on western North Pacific gray whale.
- 2001-4 Resolution on the incidental capture of cetaceans.
- 2001-7 Resolution on Southern Hemisphere minke whales and special permit whaling.
- 2001-9 Resolution on interactions between whales and fish stocks.
- 2001-12 Resolution on Dall's porpoise.
- 2001-13 Resolution on small cetaceans.

IWC 54th Annual Meeting
- 2002-1 Guidance to the scientific committee on the sanctuary review process.

IWC 55th Annual Meeting
- 2003-1 The Berlin Initiative on strengthening the conservation agenda of the International Whaling Commission.
- 2003-3 Resolution on Southern Hemisphere minke whales and special permit whaling.

IWC 56th Annual Meeting
- 2004-1 Resolution on western North Pacific gray whale.

IWC 57th Annual Meeting
- 2005-1 Resolution on JARPA II.

IWC 61st Annual Meeting
- 2009-1 Consensus Resolution on climate and other environmental changes and cetaceans.

IWC 63rd Annual Meeting
- 2011-1 Resolution on improving the effectiveness of operations within the International Whaling Commission.

IWC 64th Annual Meeting
- 2012-1 Resolution on the importance of continued scientific research with regard to the impact of the degradation of the marine environment on the health of cetaceans and related human health effects.

Annex II

AMENDMENTS TO THE COMMISSION'S RULES OF PROCEDURE AND FINANCIAL REGULATIONS

These amendments are shown as changes to the Rules of Procedure and Financial Regulations as adopted at the 64th Annual Meeting (*http://iwc.int/document_2385.download*).

New text for inclusion is in ***bold italics***; old text for deletion is ~~struck out~~.

CHANGES TO RULES OF PROCEDURE

M. Committees

4. (a) The Scientific Committee shall review the current scientific and statistical information with respect to whales and whaling, shall review current scientific research programmes of Governments, other international organisations or of private organisations, shall review the scientific permits and scientific programmes for which Contracting Governments plan to issue scientific permits, ***shall review current and potential threats and methods to mitigate them in order to maintain cetacean populations at viable levels, shall provide conservation and management advice where appropriate,*** shall consider such additional matters as may be referred to it by the Commission or by the Chair of the Commission, and shall submit reports and recommendations to the Commission.

(b) Any *ad hoc* committee, sub-committee or working group established to provide scientific advice shall report to the Scientific Committee, which shall review the report of such committee, sub-committee or working group, and, as appropriate, make its own recommendations on the subject matter.

CHANGES TO FINANCIAL REGULATIONS

C. General Financial Arrangements

1. There shall be established a Research Fund and a General Fund, and a Voluntary Fund for Small Cetaceans.

(a) The Research Fund shall be credited with voluntary contributions and any such monies as the Commission may allocate for research and scientific investigation and charged with specific expenditure of this nature. ***The Research Fund shall have a balanced distribution among activities, defined according to conservation priorities and the work of the Commission, including small cetaceans.***

(b) The General Fund shall, subject to the establishment of any other funds that the Commission may determine, be credited or charged with all other income and expenditure.

(c) The details of the Voluntary Fund for Small Cetaceans are given in Appendix 1.

The General Fund shall be credited or debited with the balance on the Commission's Income and Expenditure Account at the end of each financial year.

Annex III

PROPOSED AMENDMENTS TO THE RULES OF PROCEDURES OF THE SCIENTIFIC COMMITTEE

These amendments are shown as changes to the Rules of Procedure and Financial Regulations as adopted at the 64th Annual Meeting (*http://iwc.int/document_2385.download*).

New text for inclusion is in ***bold italics***; old text for deletion is ~~struck out~~.

The Scientific Committee, established in accordance with the Commission's Rule of Procedure M.1, has the general terms of reference defined in Rule of Procedure M.4.

In this regard, the DUTIES of the Scientific Committee, can be seen as a progression from the scientific investigation of whales and their environment, leading to assessment of the status of the whale stocks and the impact of ***direct*** catches ***and any other non-direct removal threats*** upon them, and then to provision of ***conservation and*** management advice on ***cetacean stocks and*** ~~the regulation of~~ ***lethal and non-lethal*** whaling ***activities***. This can be defined in the following terms for the Scientific Committee to:

Encourage, recommend, or if necessary, organise studies and investigations related to whales and whaling [Convention Article IV.1(a)]

Collect and analyse statistical information concerning the current condition and trend of whale stocks and the effects of whaling activities on them [Article IV.1 (b)]

Study, appraise, and disseminate information concerning methods of maintaining and increasing the population of whale stocks [Article IV.1 (c)]

Provide scientific findings on which amendments to the Schedule shall be based to carry out the objectives of the Convention and to provide for the conservation, development and optimum utilisation of the whale resources [Article V.2 (a) and (b)]

Publish reports of its activities and findings [Article IV.2]

In addition, specific FUNCTIONS of the Scientific Committee are to:

Review current threats and methods to mitigate them in order to maintain cetacean populations at viable levels [Rule of Procedure M.4]

Provide conservation and management advice [Rule of Procedure M.4; Rep. int. Whal. Commn 31:30-31; ARIWC 1998:46; 2003:58]

Receive, review and comment on Special Permits issued for scientific research [Article VIII.3 and Schedule paragraph 30]

Review research programmes of Contracting Governments and other bodies [Rule of Procedure M.4]

SPECIFIC TOPICS of current concern to the Commission include:

Comprehensive Assessment of whale stocks [*Rep. int. Whal. Commn* 34:30***; 44:32; 45:48; ARIWC 1999:55; 2000:57; 2001 Annex C:2; 2001 Annex C:4; 2003:103; 2004:66***]

Implementation of the Revised Management Procedure [*Rep. int. Whal. Commn* ***42:47-48; 43:40;*** 45:43***-44; 46:45-46; 47:51; 48:47; ARIWC 1998:42; 1999:55***]

Assessment of stocks subject to aboriginal subsistence whaling ***and Aboriginal Subsistence Whaling Management Procedure*** [Schedule paragraph 13(b); ***Rep. int. Whal. Commn45:42-43; ARIWC 1998:42; 2004:66***]

~~Development of the Aboriginal Subsistence Whaling Management Procedure [*Rep. int. Whal. Commn*45:42-3]~~

Effects of environmental change on cetaceans [*Rep. int. Whal. Commn* ***32:37;*** 43:39-40; 44:35; 45:49***; 47:52; 48:47; ARIWC 1998:43-44; 1999:53; 1999:53-54; 2000:56-57; 2001 Annex C:5; 2003:103; 2009:95; 2012:77***]

~~Scientific aspects of w~~***W***hale sanctuaries [*Rep. int. Whal. Commn****30:34;*** 33:21-2; ***43:41;*** 45:63***; ARIWC 1998:42-43; 2002:89***]

~~Scientific aspects of s~~***S***mall cetaceans [*Rep. int. Whal. Commn****31:31;*** 41:48; 42:48; 43:51; ***44:31-32;*** 45:41***-42; 47:49-50; 48:49; ARIWC 1998:43-44; 1999:55-56; 2001 Annex C:2-3; 2001 Annex C:6; 2001 Annex C:7***]

~~Scientific aspects of w~~***W***halewatching [*Rep. int. Whal. Commn*45:49-50***; 47:48***]

Human induced mortality [ARIWC 1998:42; 1998:43-44; 1999:55; 2001 Annex C:2-3]

Special permits [Rep. int. Whal. Commn 45:46; 46:46-47; ARIWC 1998:43; 1999:52-53; 2003:103; 2005:66]

DNA [ARIWC 1999:55]

Stock definition [ARIWC 1999:55]

(…)

A. Membership and Observers

5. Any non-governmental organisation sending an accredited observer to a meeting of the Commission may nominate a scientifically qualified observer to be present at meetings of the Scientific Committee. ~~Any such nomination must reach the Secretary not less than 60 days before the start of the meeting in question.and must specify the scientific qualifications and relevant experience of the nominee.~~ The Chair of the Scientific Committee shall decide upon the acceptability of any nomination but may reject it only after consultation with the Chair and Vice-Chair of the Commission. ~~Observers admitted under this rule shall not participate in discussions but the papers and documents of the Scientific Committee shall be made available to them at the same time as to members of the Committee.~~ ***They may present and discuss documents and papers for consideration by the Scientific Committee, participate on sub-committees, and they shall receive all Committee documents and papers.***

(...)

C. Organisation

1. The Scientific Committee shall include standing sub-committees and working groups by area or species, or other subjects, and a standing sub-committee on small cetaceans. The Committee shall decide at each meeting on sub-committees for the coming year.
2. The sub-committees and working groups shall prepare the basic documents***, inter alia,*** on the identification, status and trends of stocks, including biological parameters, ***threats, mitigation measures*** and related matters as necessary, for the early consideration of the full Committee.
3. The sub-committees shall concentrate their efforts on stocks ~~of large cetaceans, particularly those~~ which are currently exploited***,*** or for which exploitation is under consideration, or for which there is concern over their status.~~but they may examine matters relevant to all cetaceans where appropriate~~.
4. The Chair may appoint other sub-committees as appropriate.
5. The Committee shall elect from among its members a Chair and Vice-Chair who will normally serve for a period of three years. They shall take office at the conclusion of the annual meeting at which they are elected. The Vice-Chair shall act for the Chair in his/her absence.

The election process shall be undertaken by the heads of national delegations who shall consult widely before nominating candidates. The Vice-Chair will become Chair at the end of his/her term (unless he/she declines), and a new Vice-Chair will then be elected. If the Vice-Chair declines to become Chair, then a new Chair must also be elected. If the election of the Chair or Vice-Chair is not by consensus, a vote shall be conducted by the Secretary and verified by the current Chair. A simple majority shall be decisive. In cases where a vote is tied, the Chair shall have the casting vote. If requested by a head of delegation, the vote shall proceed by secret ballot. In these circumstances, the results shall only be reported in terms of which nominee received the most votes and the vote counts shall not be reported or retained.

(…)

G. Financial Support for Research Proposals

1. The Scientific Committee shall identify research needs.
2. It shall consider unsolicited research proposals seeking financial support from the Commission to address these needs. A sub-committee shall be established to review and rank research proposals received 4 months in advance of the Annual Meeting and shall make recommendations to the full Committee.
3. The Scientific Committee shall recommend in priority order those research proposals for Commission financial support as it judges best meet its objectives***, giving priority to the conservation status of cetacean stocks***.

(…)

H. Availability of data

4. Accredited persons

   Accredited persons are those scientists defined under sections A.1, 2, 3, ***5*** and 6 of the Rules of Procedure of the Scientific Committee. Invited participants are also considered as 'accredited' during the intersessional period following the meeting which they attend.

Annex F

Report of the Aboriginal Subsistence Whaling Sub-Committee

Friday 12 September 2014, Portorož, Slovenia

SUMMARY OF MAIN OUTCOMES

Item and Agenda Item	Main outcomes
Item 3 Aboriginal Subsistence Whaling Management Procedure	• The Sub-Committee welcomed the progress made by the Scientific Committee on developing *SLA*s for Greenland hunts, especially the completed *Humpback SLA.* The Scientific Committee received a full report on conversion factors from Greenland and agreed that future reports should go to the Commission and be incorporated in need statements if necessary. The Scientific Committee reported that it had completed its *Implementation Review* for eastern gray whales. The Sub-Committee endorsed the SC Report and its recommendations.
Item 4 Aboriginal Whaling Scheme (AWS)	• The Sub-Committee noted the Scientific Committee Report on this topic.
Item 5 Report of the *ad hoc* Aboriginal Subsistence Whaling Working Group (ASWWG)	• The Sub-Committee received the Chair's summary of the Aboriginal Subsistence Whaling Working Group (ASWWG) meeting with hunters and discussed ways forward including a proposed expert workshop but was unable to reach conclusions given the inevitably short time the summary report was available. There is broad support for continuation of the ASWWG.
Item 6 Aboriginal subsistence whaling catch limits	• The Sub-Committee received management advice for all stocks subject to ASW hunts from the Scientific Committee and endorsed its report and recommendations. • There was a full discussion of the proposed Schedule amendment for the Greenland hunts, the updated Greenlandic need statement and the related proposed Resolution by the EU. It was not possible to reach consensus and the Chair urged countries to work together towards developing a solution in time for discussions in Plenary.

The meeting took place in Portorož, Slovenia on Friday 12 September 2014. The list of participants is given as Appendix 1.

1. INTRODUCTORY ITEMS

1.1 Appointment of Chair

Bruno Mainini (Switzerland) was appointed Chair.

1.2 Appointment of rapporteurs

Greg Donovan and Pablo Sinovas (Secretariat) were appointed rapporteurs.

1.3 Review of documents

The available documents are listed in Appendix 2.

2. ADOPTION OF AGENDA

The adopted Agenda is given as Appendix 3.

3. ABORIGINAL WHALING MANAGEMENT PROCEDURE

3.1 Progress with the development of *Strike Limit Algorithms* for the Greenland hunts

3.1.1 Report of the Scientific Committee

Donovan, the Chair of the Scientific Committee's Standing Working Group on the AWMP (hereafter the Chair of the SWG) reported on the two years of work undertaken by the Committee on this topic (IWC/65/Rep1(2013)[1]: 20ff and IWC/65/Rep1(2014)[2]: 18ff).

In 2008, the Committee developed and the Commission endorsed, a safe 'interim' approach to providing advice on Greenland hunts that is valid for up to two quota blocks. It is thus working to finalise long-term *Strike Limit Algorithms (SLA*s) for all of the Greenlandic hunts in time for the Commission's 2018 Biennial Meeting. Four *SLA*s are being developed, for humpback whales, bowhead whales, common minke whales and fin whales. The last two have some issues (e.g. stock structure, abundance) in common with RMP work and joint workshops have greatly furthered progress on those. A work plan to complete the *SLA* work by 2017 and 2018 at the latest has been developed. Details of the first two years of the plan are given in Table 10 of IWC/65/Rep1(2014).

Simultaneously with the work on common minke and fin whales, the Committee has been working to finalise *SLAs* for the humpback and bowhead whale hunts.

With respect to humpback whales, thanks to progress at an intersessional Workshop, the Committee was in a positon in 2014 to review the results for four candidate *SLA*s for the set of *Evaluation* and *Robustness Trials.* The *Evaluation Trials* covered the broad range of plausible scenarios covering different need scenarios, productivity, survey frequency, survey bias, episodic events, stochastic events and environmental stochasticity. The trials also allowed for entanglements and vessel strikes throughout the migratory range of the West Greenland feeding aggregation, based on information on movements from photo-identification data and available information on the two sources of mortality. The full set of tabular and graphical results are available from the Secretariat.

After fully reviewing the performance on conservation (highest priority) and need satisfaction, the Committee

[1]Published as: *J. Cetacean Res. Manage. (Suppl.)* 15. [2014].
[2]Published as: *J. Cetacean Res. Manage. (Suppl.)* 16. [2015].

agreed by consensus a *Humpback SLA* (originally known as *SLA*3) that meets the Commission's conservation and user objectives and recommended it to the Commission, subject to final validation of the code and archive running of the full set of statistics.

The Committee commended the work of its SWG, the developers and those who finalised the operating model and conditioning. It stressed that this successful conclusion could not have been achieved without assistance from the Commission's Developers' Fund, intersessional Workshops and an active intersessional Steering Group. It agreed that this process should be followed for the remaining *SLA*s.

The Committee also reviewed the results for four candidate *SLA*s for the Greenlandic hunt of bowhead whales. This case is more complex than for the humpback whale case for a number of reasons, primarily related to:

(1) the *SLA* can only 'control' the Greenland hunt whereas there is a hunt by a non-member nation as well as from bycatches;
(2) it cannot be assumed that Canadian abundance surveys will occur in the future; and
(3) remaining stock structure uncertainty means that scenarios that may be overly conservative must be considered including stock structure questions and hunting from a non-member nation.

Necessary improvements were identified and it is expected to be able to produce a recommended *SLA* at the 2015 Annual Meeting.

The results from the trials for humpback and bowhead whales also confirmed the value of the interim approach.

The Committee is aware that Greenland expresses its need in terms of tonnes of edible products rather than numbers of individual whales by species and that it has indicated that flexibility is important given the variability in the environment. The Committee reiterated that work on a multispecies flexible approach could occur after the individual *SLA*s are completed.

3.1.1.1 CONVERSION FACTORS

At the 2014 Annual Meeting, the Committee welcomed the full report submitted by Greenland on conversion factors (i.e. average edible products obtained per strike by species) in response to initial recommendations by a Commission special expert group (Donovan *et al*. 2010[3]) and follow-up recommendations by the Scientific Committee. It noted that the provisional conversion factors (for fin, humpback and bowhead whales – the factor recommended for common minke whales was based on sufficient data) developed by the expert group appear to overestimate the amount of edible products actually obtained (although sample sizes are small), but were generally within the confidence intervals. It also noted the low numbers of lost whales in the Greenlandic hunts.

After receiving this full report, the Committee agreed that annual update reports are unnecessary for the work of the Scientific Committee. It suggested that collected data are submitted directly to the Commission when it meets and incorporated as necessary into need statements.

3.1.2 Discussion and recommendations

The Chair thanked the Committee for its excellent work in developing the *Humpback SLA*, recognising the importance of scientific advice to the work of the Commission on aboriginal subsistence whaling.

Denmark also thanked the Scientific Committee, stating that it respected the integrity of its advice. It will continue to provide all necessary data and information.

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

3.2 *Implementation Review* for gray whales

3.2.1 Report of the Scientific Committee

The Chair of the SWG reported that the Scientific Committee agreed in 2010 that the Pacific Coast Feeding Group ('PCFG') of gray whales should be treated as a separate management unit. Through a series of workshops and work at Annual Meetings, the Committee reviewed a number of management regime options suggested by the Makah Tribe to ensure that the Commission's conservation and user objectives were met for the PCFG. Two acceptable 'variants' were identified in 2012 and reported to the Commission at that time. However, the Committee had noted that some final trials were required and these were undertaken after the 2012 meeting.

After reviewing the trial results the Committee, agreed by consensus, that the management plan met the Commission's conservation objectives provided that if struck and lost animals are not assumed to be PCFG whales, then a photo-identification programme to monitor the relative probability of harvesting PCFG whales in the Makah hunting grounds each year must be undertaken, with the results presented to the Scientific Committee for evaluation. The proposed management plan has been fully evaluated within the *SLA* framework.

The Committee agreed that the next *Implementation Review* should not occur until the completion of the rangewide assessment of gray whales that began with a workshop in 2013.

3.2.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

4. ABORIGINAL WHALING SCHEME (AWS)

4.1 Report of the Scientific Committee

The Chair of the SWG reported that in 2002, the Committee **strongly recommended** that the Commission adopt the Aboriginal Subsistence Whaling Scheme (see IWC, 2003[4]). This scheme covers a number of practical issues such as survey intervals, carryover and guidelines for surveys. The Committee has stated in the past that the AWS provisions constitute an important and necessary component of safe management under AWMP *SLA*s. It **reaffirmed** this view as it has for the previous 12 years.

4.2 Discussion and recommendations

In discussion, the USA noted that as in past years, it cannot support adoption of an AWS at this time. It believes that the current Aboriginal Subsistence Whaling Management regime set forth in Schedule paragraph 13(a) has worked well for guiding the IWC in its management of subsistence hunts for over 30 years. It believes that any AWS tool must be a true improvement over the IWC's current procedure and fit within the Scheme set forth in Schedule Paragraph 13(a). This paragraph provides the context and guidance required by the Commission for reviewing the Scientific Committee's advice under any Revised Aboriginal Whaling Management Procedure.

[3]Donovan, G., Palka, D, George, C., Levermann, N., Hammond, P. and Witting, L. 2010. Report of the small working group on conversion factors (from whales to edible products) for the Greenlandic large whale hunt. Paper IWC/62/9 presented to the IWC Commission meeting, 21-25 June 2010, Agadir, Morocco (unpublished). 54pp. [Paper available from the Office of this Journal].

[4]*Ann. Rep. Whal. Comm. 2002*: 74-75 [2003].

The Sub-Committee noted the Scientific Committee's report on this issue.

5. REPORT OF THE *AD HOC* WORKING GROUP ON ABORIGINAL SUBSISTENCE WHALING

5.1 Chair's summary of the pre-meeting

The Chair of the *Ad Hoc* Working Group on Aboriginal Subsistence Whaling (ASWWG), Dr. Michael Tillman, provided a summary of the meeting between the ASWWG and native hunters that took place on 10 September 2014. Details of the meeting can be found in Part 1 of the ASWWG Chair's Report of this meeting (see Appendix 4, originally IWC/65/ASWRep01).

He also summarised discussions during the closed session of the ASWWG. Details of this meeting and the action items for 2014-16 can be found in Part 2 of the ASWWG Chair's Report (see Appendix 4, originally IWC/65/ASWRep01). During this meeting the ASWWG discussed ongoing issues before the group, and identified two action items for completion during the 2014-16 intersessional period. These actions items included:

(a) the USA and Denmark, with assistance from the IWC's Head of Science to develop a proposal for a workshop to address the long term issues before the ASWWG that are of greatest concern and to further define or develop explanatory statements that provide the required context to understand these issues in order to facilitate meaningful discussion and develop potential solutions; and

(b) Japan, with assistance from the USA and the IWC Head of Science to prepare a report on the issue of local consumption versus commercialism, taking into consideration input provided by the native whalers and the ASW countries.

As an outcome of (a), a proposal for an expert workshop to assist the ASW Sub-Committee and the Commission with respect to improved procedures for considering ASW catch limits, with a focus on consideration of need, can be found at Appendix 4, Adjunct 2.

The Chair of the ASWWG indicated that a full ASWWG report will be completed during the 2014-16 intersessional period, at which time all members of the ASWWG will be invited to review and suggested revisions to the report before it becomes final. At that time, it will be forwarded to the IWC Secretariat for posting on the IWC website.

5.2 Discussion and recommendations

The Chair thanked the ASWWG for its work, noting that he found the meeting with hunters valuable. In particular he thanked the Chair of the ASWWG for getting his summary document together in such a short period of time.

During the discussion, some countries identified areas for improvement and clarification in Appendix 4. The Chair of the ASWWG agreed to incorporate clarifications and prepare a revised version for consideration in Plenary.

Several countries thanked the Chair of the ASWWG but noted that they needed more time to fully consider the report and work plan before reaching conclusions, noting that they may comment in Plenary discussions of this item.

In addition, Mexico noted that they believed that the comments of range states should be required when discussing subsistence hunts, including matters related to whalewatching on the same populations. Chile supported Mexico noting that any discussions of aboriginal subsistence whaling should take into account the Commission's resolution on non-lethal uses of cetaceans. Argentina, Mexico and Chile stated that they believed that it was premature to substitute the word 'indigenous' for 'aboriginal'.

Russia noted the importance of receiving the views of hunters in the ASW process. It noted the importance of flexibility on the question of standardising reporting given the variability in the cultural and other aspects of the different hunts. It also commented that with respect to the 'stinky' whale issue, a further option to that considered in Appendix 4 was for such inedible whales to be treated as 'struck-but-lost'.

In conclusion, the Chair commented that there was broad support for the continuation of the ASWWG, thanked its Chair for offering to update the draft prior to Plenary and noted that discussions would continue in Plenary after countries had more time for reflection.

6. ABORIGINAL SUBSISTENCE WHALING CATCH LIMITS

Before discussing this Item, the Chair noted that he intended to address papers related to the proposed Schedule amendment for the Greenland hunt, the new Greenlandic need statement and the proposed resolution by the EU after receiving the report of the Scientific Committee on all subsistence hunts. That discussion can be found under Item 6.8.

6.1 Bering-Chukchi-Beaufort (B-C-B) Seas bowhead whales

6.1.1 Report of the Scientific Committee

The Chair of the SWG reported that the Committee had agreed a new abundance estimate of 16,892 (95%CI 15,705-18,928) for 2011 (and an average annual increase of 3.7% (95% CI: 2.8-4.7%). It reaffirmed that the *Bowhead SLA* is the appropriate management tool for the B-C-B bowhead whales and repeated its advice that the strike limits adopted by the Commission for the six-year block 2013-18 (i.e. 336 with a maximum of 67 in any one year) will not harm the stock.

6.1.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.2 North Pacific gray whales

6.2.1 Report of the Scientific Committee

The Chair of the SWG reported that the Committee reiterated that the *Gray Whale SLA* is the appropriate management tool for the eastern North Pacific gray whales and repeated its advice that the strike limits adopted by the Commission for the six-year block 2013-18 (i.e. 744 with a maximum of 140 in any one year) will not harm the stock. It also agreed that the Makah management plan (including maintenance of an ongoing research programme) recommended at SC/65a was the appropriate tool for the management of that hunt if it takes place.

6.2.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.3 Common minke whales off Greenland

6.3.1 Report of the Scientific Committee

6.3.1.1 WEST GREENLAND

The Chair of the SWG reported that in 2009, the Committee was able to provide management advice for this stock for the first time. This year, using the Commission's agreed interim approach (IWC, 2009[5]) and last year's revised estimate

[5] *Ann. Rep. Int. Whal. Comm. 2008*: 16 [2009].

of abundance (16,100 CV=0.43), the Committee advised that an annual strike limit of 164 will not harm the stock. The Committee welcomed information from Greenlandic samples that contributed to its work on stock structure of North Atlantic common minke whales and encouraged continued sample collection (and see Item 9.5 below).

6.3.1.2 EAST GREENLAND

The Chair of the SWG reported that the catches of minke whales off East Greenland are believed to come from the large central stock of common minke whales. The most recent strike limit of 12 represents a very small proportion of the central stock which numbers around 40,000. The Committee repeated its advice of last year that an annual strike limit of 12 will not harm the stock.

6.3.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.4 Fin whales off West Greenland

6.4.1 Report of the Scientific Committee

The Chair of the SWG reported that based on the agreed 2007 estimate of abundance for fin whales (4,500, 95%CI: 1,900-10,100) and using the agreed interim approach, the Committee repeated its advice that an annual strike limit of 19 whales will not harm the stock. The Committee welcomed information from Greenlandic samples that contributed to its work on stock structure of North Atlantic fin whales and encouraged continued sample collection.

6.4.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.5 Bowhead whales off West Greenland

6.5.1 Report of the Scientific Committee

The Chair of the SWG reported that based upon the agreed abundance estimate for 2012 (1,274, CV=0.12) and the agreed interim approach, the Committee repeated its advice that an annual strike limit of two whales will not harm the stock.

6.5.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.6 Humpback whales off West Greenland

6.6.1 Report of the Scientific Committee

The Chair of the SWG reported that based on last year's revised and agreed estimate of abundance for humpback whales (2,704 CV=0.34) and the agreed interim approach, the Committee agreed that an annual strike limit of 10 whales will not harm the stock.

Furthermore, the Committee recommended that the new *Humpback SLA* (agreed above under Item 3.1.2) should be used to provide management advice by the Committee in the future, following completion of the usual final validation/checking process. The Committee noted that the *Humpback SLA*, if used now, would provide the same management advice as the interim approach for within this period, i.e. that an annual strike limit of 10 whales will not harm the stock.

6.6.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.7 Humpback whales off St Vincent and The Grenadines

6.7.1 Report of the Scientific Committee

The Chair of the SWG reported that the Committee has agreed that the animals found off St Vincent and The Grenadines are part of the large West Indies breeding population (abundance estimate 11,570 95%CI: 10,290-13,390). The Commission adopted a total block catch limit of 24 for the period 2013-18. The Committee repeated its advice that this block catch limit will not harm the stock.

6.7.2 Discussion and recommendations

The Sub-Committee endorsed the report of the Scientific Committee and its recommendations.

6.8 Consideration of matters related to the proposal for catch limits for the Greenland hunt

6.8.1 Presentation of documents

6.8.1.1 DENMARK/GREENLAND

Denmark introduced two papers, its proposed Schedule amendment (IWC/65/06) and its new need statement (IWC/65/17). With respect to strike limits the proposal for West Greenland was for 164 common minke whales, two bowhead whales, 19 fin whales and 10 humpback whales for each of the next four years. In addition for East Greenland the proposal was for 12 common minke whales. The proposed strike limits are, as in previous requests, consistent with the advice of the Scientific Committee. Denmark also welcomed the significant achievements by the Scientific Committee on developing *SLA*s for the Greenland hunts and its acknowledgement of progress on conversion factors.

Denmark noted that the proposal was supported by a comprehensive need statement with new and additional information which explains the needs related to the multispecies opportunistic hunt and satisfies all IWC requirements.

The representative from Greenland summarised the need statement on behalf of the people of Kalaallit Nunaat – Greenland with 17 towns and 73 settlements along the coast with a population of about 56,000 in 2014. She noted that there are four important elements in work of the Sub-Committee:

(1) to receive information from the Scientific Committee;
(2) to consider nutritional, subsistence and cultural needs;
(3) to consider the use of whales taken; and
(4) to provide advice to the Commission.

Greenland sincerely wished for a consensus solution that maintained its trust in the IWC as an international management organisation.

The discussion of the Greenlandic need statement dates back to the late 1970s and considerable documentation has been presented and discussed over the years. Major improvements in data, information, research and management measures have been accomplished since that time. These are considered in the need statement and the need in tonnes for West Greenland endorsed by the IWC in 1990 and 1991 arose from consideration of average yearly catches for the 20-year period prior to the moratorium and conversion factors for edible products. The situation in East Greenland is for a single species hunt so is expressed in numbers and there are no plans to change the request.

Using the new conversion factors from the IWC expert group report gives a potential of 654 tonnes. Using the population for West Greenland in 2014 this corresponds to one monthly dinner for a family of five but in reality based on actual numbers landed from 2008-12 it amounts to 594 tonnes or one monthly dinner for a family of four. The proposed quotas for 2015-18 suggest edible products

between 145 and 205 tonnes less than the documented actual need for West Greenland of 799 tons. Allowing Greenland to obtain sufficient whale products to fulfil the documented need will also protect the global climate and the environment by rationally using local resources.

The hunt will be sustainable and well-regulated. Furthermore, Greenland will continue to work actively on improving the welfare aspects and continue to submit data and be committed to other IWC relevant activities. It hopes that the IWC will be able to take management decisions based on the best available scientific knowledge and with respect for the cultural, nutritional and socio-economical needs of Kalaallit and in this respect also fulfils the obligations of the IWC Convention.

Denmark concluded that in the longer term, it wished to see a more stable, less politicised and truly six-year quota block management of ASW based on objective, scientifically based information that allows for the hunters and authorities in ASW countries to plan and use resources in a meaningful and effective way. It wished to thank all those who have engaged constructively in the intense dialogue and consultations over the past year in overcoming the very difficult situation faced by them and the IWC, including the engagement of the Bureau, the Chair, and a large number of IWC members, and with the assistance of the Secretariat.

It noted that its proposal is part of a package solution agreed with the EU that addresses both short-term and long-term issues. As such Denmark believed that it is a sensitive and carefully balanced compromise, developed to address a number of broad concerns among IWC members. Denmark encouraged all Contracting Governments to support the Schedule proposal as part of the package by consensus. Its sincere hope was that a solution could be found at this meeting to allow the IWC to continue managing subsistence whaling of Greenland and for Denmark to remain an active partner in the conservation and management of the world's large whales, including participation in the ASW Sub-Committee.

6.8.1.2 EUROPEAN UNION

Italy introduce the proposed resolution (IWC/65/15) on behalf of those EU Member States that are members of the IWC. It noted that the EU and its Member States support aboriginal subsistence whaling to satisfy aboriginal subsistence needs. The proposed Resolution is part of a broader package on aboriginal subsistence whaling and was drafted in the light of progress made on a number of matters since IWC/64, including the updated Greenlandic need statement and Schedule proposal as well as advice from the Scientific Committee.

The proposed Resolution aims to strengthen the IWC management of ASW through a more consistent and long-term approach. It further aims to stimulate the proactive participation of all Contracting Governments in the work of the ASW Sub-Committee and its related Working Groups. It also contains a number of requests to the Scientific Committee and to the ASW Sub-Committee to set a substantive mid-term work plan (2014-18), recognising that the former is in line with the work plan already proposed by the Committee itself. The latter is also in accord with the proposal for an expert workshop developed in ASW65/ASWRep01 Addendum as referred to under Item 5.1 above.

Italy emphasised that great care went into developing the content and wording of the Resolution with the aim of addressing all relevant issues and problems in a balanced way. The sponsors very much hope that this Resolution is received positively and it is willing to work with all IWC members to try to reach consensus.

6.8.2 Discussion and recommendations

There was considerable discussion and a short summary is provided here. A number of countries expressed concern over some issues that meant that they were unable to support the proposed Schedule amendment and Resolution as they stood.

Argentina noted that while it supported ASW in general it had a number of concerns, shared by other members of the 'Buenos Aires Group' primarily related to: (a) the fact that the catches taken since 2012 had not been recognised as infractions by Denmark, as it had already raised in the Infractions Sub-Committee; and (b) the strong commercial component of the Greenland hunts compared to other ASW hunts. In addition, it believed that the present ASWWG should be allowed to continue its work at its present pace and it referred to its comments in that group regarding: (a) whalewatching (i.e. that whalewatching companies and all the range state countries of a population hunted under ASW should participate in discussions and provide their view on the potential impacts on the availability of whales for other communities and other uses e.g. whalewatching); and (b) that need requests must be in terms of numbers of whales not tonnes of edible products. It was thus not able to support consensus.

This view was supported by Panama and Mexico, the former referring to whalewatching in the Dominican Republic and the latter to the fact that the need statement referred to the full population of Greenland not only aboriginals. Peru and Chile also concurred with the views of the three countries above. Chile raised additional concerns at the calculations in the need statement, particularly related to the amount of edible products consumed (which it believed conflicted with a study from the University of Southern Denmark) and the use of projected human population numbers rather than true consumption today, thereby overestimating need. It also reiterated concerns over sales to tourists and commercialisation and believed catches of small cetaceans must also be considered as part of the need statement. Uruguay concurred with the above concerns, noting in addition that it believed that the Scientific Committee was spending too much time on the *SLA* process and other matters related to direct exploitation which meant that it was not dedicating sufficient effort to conservation issues on non-lethal problems.

Monaco, whilst expressing sympathy for the above views but also for the situation of Denmark/Greenland, believed that more effort was required to reach consensus. It noted that the consideration of multi-species harvesting in the need statement should take all species into account including fish and seals as well as all cetaceans. It commented that the waters of West Greenland were rich and that careful consideration should be made before migratory species are taken, noting that humpback whales migrate between Greenland and the Caribbean. Australia agreed with Monaco and requested information from Denmark on the consultation process with range states.

A number of other countries expressed support for the proposed Schedule amendment and Resolution.

The USA commended Denmark for their extensive outreach and consultations over the last two years. The proposal was in agreement with Scientific Committee advice and request was sufficiently documented in the updated needs statement; it hoped the proposed Schedule amendment would be adopted by consensus. The USA also echoed the comments by Denmark regarding the existing long-term issue of the politicisation of ASW catch limits. These extended discussions unnecessarily took time away from discussion of conservation and other important issues. It also supported adoption of the Resolution which addresses

issues raised with respect to the Greenland hunt and on long-standing ASW issues and concerns. It considered the proposed resolution to be consistent with the ASWWG's recommendations and the work of the ASW Sub-Committee.

The Russian Federation also welcomed the new documents and strongly supported solving ASW issues by consensus. With respect to the Resolution it noted discussions in the ASWWG about the need for flexibility when considering levels of 'standardisation' with need statements, given the variety of cultural and practical aspects of the various ASW hunts. It believed that the Resolution is applicable only to Greenland and will thus support the consensus.

Sweden referred to its support for ASW and for Greenlandic hunts and agreed with the USA view that the proposal was sustainable and met IWC requirements in its updated need statement. It recognised the need to be careful with respect to 'standardisation' and definitions of need. Finland concurred with Sweden.

Norway stated that in its view there are only two types of whaling: sustainable or unsustainable. As the proposal was clearly sustainable it was not concerned about the need statement and it would thus support it.

Japan commented on the excellent progress made by Denmark, Greenland and the EU. It agreed with Norway and Sweden and supported the proposal. It believed sustainability is the key concept and warned against arrogant attitudes that wish to dictate what people in other countries or communities should eat.

In its closing comments, Denmark thanked all of the countries for their views on this issue that it recognised was complex. It stressed that it had provided the need statement for information not approval. The issue of need is complex and there are many aspects involved; consideration of the full complexity is a matter for the government concerned. It is clear that this is not commercial whaling but hunting carried out by aboriginal subsistence communities and in line with previous definitions agreed by the IWC. It has tried extremely hard to address all concerns that have been expressed at previous meetings and during its extensive consultation process, which had included as many Commission members as possible including a telephone conference with the Buenos Aires group and had received no concrete suggestions that it had not tried to accommodate. It truly hoped that the Commission could move forward positively on this issue by consensus.

In its closing remarks, Italy on behalf of the EU thanked all those who had supported the proposed Schedule amendment/Resolution package. It reiterated that great care and time had gone into drafting the Resolution after serious consideration of the revised need statement. It urged those countries opposing consensus to consult and reconsider and try to move forward. The UK and France supported this view.

In conclusion, the Chair noted that there was no consensus on the proposed Schedule amendment/Resolution at present. He reiterated the importance of the issue to the IWC and urged countries to work together towards developing a solution in time for discussions in Plenary.

7. OTHER MATTERS

No other business was raised.

8. ADOPTION OF REPORT

The report was adopted by correspondence on 14 September 2014.

Appendix 1

LIST OF PARTICIPANTS

ARGENTINA
Miguel Iñíguez
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Donna Petrachenko
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Harry Brower
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Roger Eckert
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Lisa Phelps
Allison Reed
DJ Schubert
Scott Smullen
Michael Tillman

URUGUAY
Rodrigo Garcia

CHAIR OF THE SCIENTIFIC COMMITTEE
Toshihide Kitakado

SECRETARIAT
Simon Brockington
Greg Donovan
Kate Wilson
Andrea Cooke
Pablo Sinovas

Appendix 2

LIST OF DOCUMENTS

IWC/65/ASW		**Agenda Item**
01	Draft Agenda	
02	List of Documents	
Rep01	Chair's Report from *Ad Hoc* Aboriginal Subsistence Whaling Working Group Meeting with Native Hunters	5.1

Relevant Commission documents

IWC/65		
15	Draft Resolution on Aboriginal Subsistence Whaling (ASW) (submitted by Italy, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom)	6
16	Proposed Schedule Amendment for Greenland Aboriginal Subsistence Whaling (submitted by Denmark)	6
17	Utilization of large whales in Greenland – a need statement (submitted by Denmark)	6
Rep01(2013)	Report of the Scientific Committee (2013)	
Rep01(2014)	Report of the Scientific Committee (2014)	

Appendix 3

AGENDA

1. Introductory items
   - 1.1. Appointment of Chair
   - 1.2 Appointment of rapporteurs
   - 1.3 Review of documents
2. Adoption of Agenda
3. Aboriginal Whaling Management Procedure
   - 3.1. Progress with the development of *Strike Limit Algorithms* for the Greenland hunts
     - 3.1.1 Report of the Scientific Committee
     - 3.1.2 Discussion and recommendations
   - 3.2 *Implementation Review* for gray whales
     - 3.2.1 Report of the Scientific Committee
     - 3.2.2 Discussion and recommendations
4. Aboriginal Whaling Scheme (AWS)
   - 4.1 Report of the Scientific Committee
   - 4.2 Discussion and recommendations
5. Report of the *Ad Hoc* Working Group on Aboriginal Subsistence Whaling
   - 5.1 Chair's summary of the pre-meeting
   - 5.2 Discussion and recommendations
6. Aboriginal subsistence whaling catch limits
   - 6.1 Bering-Chukchi-Beaufort (B-C-B) Seas bowhead whales
     - 6.1.1 Report of the Scientific Committee
     - 6.1.2 Discussion and recommendations
   - 6.2 North Pacific gray whales
     - 6.2.1 Report of the Scientific Committee
     - 6.2.2 Discussion and recommendations
   - 6.3 Common minke whales off Greenland
     - 6.3.1 Report of the Scientific Committee
     - 6.3.2 Discussion and recommendations
   - 6.4 Fin whales off West Greenland
     - 6.4.1 Report of the Scientific Committee
     - 6.4.2 Discussion and recommendations
   - 6.5 Bowhead whales off West Greenland
     - 6.5.1 Report of the Scientific Committee
     - 6.5.2 Discussion and recommendations
   - 6.6 Humpback whales off West Greenland
     - 6.6.1 Report of the Scientific Committee
     - 6.6.2 Discussion and recommendations
   - 6.7 Humpback whales off St Vincent and The Grenadines
     - 6.7.1 Report of the Scientific Committee
     - 6.7.2 Discussion and recommendations
   - 6.8 Consideration of matters related to the proposal for catch limits for the Greenland hunt
     - 6.8.1 Presentation of documents
     - 6.8.2 Discussion and recommendations
7. Other matters
8. Adoption of Report

Appendix 4

CHAIR'S REPORT FROM *AD HOC* ABORIGINAL SUBSISTENCE WHALING WORKING GROUP MEETING WITH NATIVE HUNTERS

Wednesday 10 September 2014, Portorož, Slovenia

BACKGROUND

In April 2013, the Association of Traditional Marine Mammal Hunters of Chukotka, the Alaska Eskimo Whaling Commission, and the Makah Tribe submitted a letter to the Chair of the Aboriginal Subsistence Whaling Working Group (ASWWG) indicating their interest in providing input on the issues under consideration by the ASWWG.These native groups viewed these issues to be of paramount importance because of their impact on the subsistence uses of whales.

They requested that the ASWWG convene a meeting with native hunters to hear their perspectives on aboriginal subsistence whaling and the issues the ASWWG was discussing, so that this input may inform ASWWG deliberations. The ASWWG subsequently agreed to do so.

The ASWWG agreed to organise the meeting into a series of open sessions (see the agenda in Appendix 1) to hear the native hunters' views, clarify and share information, air views and enable a dialogue between disparate parties. The ASWWG also agreed to have a closed session to consider some old business that it had not been able to bring to closure by intersessional correspondence.

REPORT

The ASWWG agreed that, for the purposes of reporting to the ASW Sub-Committee meeting scheduled two days after the ASWWG meeting, the Chair, assisted by the rapporteurs, should provide a short Chair's Report.This would not be a verbatim report nor would it attempt to summarise the extensive presentations made by representatives of the native hunting groups during the ASWWG's open sessions. In the Chair's view, attempting to make such a summary would be a disservice to the native hunters' extensive and comprehensive input since time would not be available for full review and comment. The Chair's Report would instead provide his initial impressions gained from the meeting and emphasise some salient points. Accordingly, the Chair's Report does not necessarily reflect the views and impressions of all participants. The ASWWG also agreed that the Chair should work with the rapporteurs to prepare a full report of the meeting that would be circulated for review and comment in accord with the ASWWG's usual intersessional process. When this had been completed to everyone's satisfaction, the final report would be submitted to the IWC Secretariat for distribution to all Contracting Governments and posted on the IWC's website.

SUMMARY

1. Open sessions

Members of the ASWWG, other Contracting Governments, and Observers met with representatives of native hunting organisations including the Alaska Eskimo Whaling Commission, the Makah Tribe, KNAPK (Organization of Fishermen and Hunters in Greenland), and the Association of Traditional Marine Mammal Hunters of Chukotka to engage in a dialogue about ASW issues. Hunters from St Vincent and The Grenadines were invited but were unable to participate. The agenda for the meeting is given in Appendix 1. In particular, the native hunters were asked to provide input on the following seven long-term issues that the Commission had asked the ASWWG to address:

- standardised needs statements;
- removing ASW catch limits from political discussions;
- changing the term 'aboriginal' in ASW;
- obtaining adequate information for ASW catch limits;
- ensuring local consumption versus commercialism;
- improving operational efficiencies; and
- improving welfare of the hunt.

The presenters were each allowed a 30-minute period to express their views on the issues and to answer questions for clarification. ASWWG members and observers were then given opportunities to ask additional questions, make comments, and engage in a dialogue with the native hunters after completion of the presentations. This generated a number of substantive questions, comments, and statements related to ASW that triggered additional dialogue and identified possible action items. As noted above, the full report will elaborate the presentations and subsequent exchanges more fully. The Chair, however, noted some commonalities from the presentations by native hunter representatives as follows.

- Native people have the right to hunt and sustainably utilise whales and other wildlife.
- Native whaling has occurred for thousands of years.
- Native whaling provides food for entire communities including community sectors that aren't able to engage in whaling themselves but that may rely on or support the native whalers; through hunting and food sharing traditions, such hunts bind communities together.
- Whaling is expensive and includes costs associated with equipment, maintenance of that equipment, fuel, support for whaling crew members, and training. Requirements imposed by the IWC have made it even more expensive, particularly the use of penthrite grenades, which are expensive ($1,000 each) and can only be used once.
- Establishing requirements for standardised needs statements is not warranted and, if pursued, should be done with great caution. Any template must provide broad flexibility to all ASW countries to determine and document need consistent with their practices and processes since all ASW communities and their hunts are different in terms of histories, traditions, culture, and methods of harvesting whales.
- Consensus that politics must be removed from decisions concerning ASW catch limits, as politics must never be used to threaten a community's food supply and security.
- While there was no strong opposition to changing the word 'aboriginal' to 'indigenous', most native hunters do not believe that this is a high priority issue.
- Clarification is needed as to the meaning and context of some of the long-term issues such as what additional information beyond that currently included in needs statements is required to document ASW catch limits adequately and how local consumption and commercialism are defined and whether that issue is applicable only to Greenland or to all ASW countries.
- Native whalers are concerned about operational efficiency and preventing suffering of the whales and strive to improve their hunts by utilising modern technology and through ongoing education and training.

The Chair also noted the extensive ASWWG discussion on whether ASW whaling should be restricted to using traditional hunting methods. Participants generally agreed that use of improved hunting methods such as the use of modern weapons and vessels should be allowed as appropriate to further a variety of IWC goals including reducing the numbers of whales struck and lost, reducing the time to death of struck whales, and promoting hunter safety.

2. Closed session

In a subsequent closed session, the ASWWG members discussed specific topics previously raised intersessionally by the Governments of Japan and Argentina. These topics included Japan's request for input on setting priorities for the seven long-term issues and Argentina's concern that some whale stocks subject to ASW in one country are subject to whalewatching in another country.

2.1 Japan's request for input

In one of his initial circular letters to the ASWWG, the Chair had requested that members submit their views on prioritising the seven long-term issues. Japan had responded that, before doing so, it would prefer to obtain the views of countries with ASW on the following three points.

- Changing the term 'aboriginal' in ASW.

The Chair noted that this issue had first been raised during the 'Future of the IWC' discussions where some Commission members had expressed concern that the term 'aboriginal' had a negative or discriminatory connotation.

In the ASWWG's ensuing discussion of this topic, ASW hunters indicated that, while they generally did not oppose such a change, it was not a priority issue for them. There was also general agreement that, if the term were changed, the Secretariat would need to review all relevant IWC documents in order to amend them consistent with the change in terminology.

One ASWWG member supported retaining the term 'aboriginal' due to how the two terms (aboriginal and indigenous) are interpreted in Latin America.

- Ensuring local consumption versus commercialism and whether the amount of commercialism allowed under the current definition should remain.

In the ensuing discussion of this topic, ASW countries provided input on how their respective national legislation addresses this issue. In some countries the sale of whale meat and other edible products is not permitted but the making and selling of handicraft from non-edible parts of a whale is permitted. Other countries have legislation they believe is consistent with IWC regulations or have promulgated directives to prohibit the export of whale meat. Several ASW countries indicated that this is an important issue that should be given priority with some linkage to the issue of politics in ASW discussions. One ASW country indicated that it may be difficult to come to a conclusion on this issue given that commerciality of some form exists in each ASW

country.When such commerciality or exchange is on a small scale, it appears not to be controversial. However, additional guidance on when the sale of whale products results in an ASW hunt becoming commercial would be useful. Should it be based on a percentage of products in commercial trade? It was suggested that a survey be developed and distributed to individual ASW communities to obtain their input on this question. The commerciality of non-edible portions of whales (i.e. the potential use of glands for medical research purposes) was identified as another issue to consider. Ultimately, such issues directly relate to the sustainable use of whales.

At the conclusion of this discussion, Japan offered to prepare a paper exploring these issues, taking into account the information shared by the ASW countries.

- Establishing priorities for addressing long term issues.

During the discussion of this topic, most participants opted not to prioritise the entire list of seven long-term issues. Nevertheless, it appeared that several issues are of higher concern and importance than others. These issues are: standardised needs statements, removing ASW catch limits from political discussions, and local consumption versus commercialism. One ASW country indicated that all of the issues are important and observed that those of less concern are linked to those of higher concern. Another issue highlighted by ASW hunters and ASW countries as a concern are the costs associated with the equipment and training used to improve the efficiency and humaneness of the hunts. Yet another country raised the issue of unusable whales (e.g. stinky whales) and how it was important to take into consideration such whales in calculating a country's need. It was suggested that the Scientific Committee could analyse how this may be accommodated by, for example, using a fixed number of animals, a fixed percentage of the total catch limit, establishing a carry-over provision to accommodate for unusable whales, and/or to consider such whales as 'struck and lost.'

2.2 ARGENTINA'S CONCERN THAT REVIEWS OF ASW QUOTAS CONSIDER POTENTIAL IMPACTS ON THE AVAILABILITY OF WHALES FOR OTHER COMMUNITIES AND OTHER USES (E.G. WHALEWATCHING)

Argentina expressed concern that some whale stocks subject to ASW in one country are subject to whalewatching in another country. In addition to the present meeting it suggested a similar meeting with whalewatch operators and countries that support whalewatching in order to ascertain their input on how whaling, including ASW whaling, may impact whalewatching. Though the present meeting was not organised to address this specific topic, there was considerable discussion about the interactions between whaling and whalewatching.

In the ensuing discussion if this topic, some participants indicated that whalewatching and whaling are not mutually exclusive and that, in some places, there may be interest in 'whaling watching.' Others thought this to be a complex issue that may not be appropriate for the ASWWG. Some participants recommended obtaining the advice of the Whalewatching Sub-committee on this issue and perhaps undertaking joint work to address this concern. Others noted that there are a variety of issues that affect whales, not just ASW, and that all of these activities can impact whalewatching, a further indication of the complexity of this issue. Some participants did not understand Argentina's concerns and indicated that, if resolution of this issue involves ceasing ASW to benefit whalewatching, any agreement is unlikely. Those engaged in ASW generally believed that the food security needs associated with ASW should take priority over the commercial aspects of whale watching. It was also suggested that the concern about the impacts of ASW on whalewatching could be viewed in reverse in that there may be instances where whalewatching may impact ASW. For some native whalers, the resolution of conflict is a key part of their culture and that, through such resolutions, they believed whale hunting and whalewatching could coexist.

A representative of the Scientific Committee noted that science can provide advice on where animals go, how many there are, what types of conflicts may occur, and how those conflicts may impact populations, but it cannot resolve these types of social conflicts between ASW and whalewatching.

As to how to proceed, some participants suggested reviewing the advice of the Working Group on Whale Watching on this issue or referring this issue to that working group. It was generally agreed that this issue should not be referred to the Scientific Committee. Argentina reiterated its interest in having another meeting like this one with indigenous whalers but to invite whalewatch operations and representatives of countries that have an active and growing whalewatching industry to participate. It was suggested that a particular case study (e.g. St Vincent and The Grenadines) might be used to further explore these issues but that additional input from whalewatchers would be needed. No consensus view emerged, however, on how to proceed.

The Chair concluded that there was an impasse on this issue and suggested that this discussion be noted in the Chair's Report of this meeting and brought to the attention of the ASW Sub-Committee, but that no recommendation would be made.

Action items

As a result of its deliberations, the ASWWG agreed on two action items.

- The USA, Denmark, and the IWC's Head of Science will develop a proposal for a workshop to address those long-term issues that are of greatest concern and to further define or develop explanatory statements that provide the required context to understand these issues in order to facilitate meaningful discussion and develop potential solutions; this proposal will be submitted to the ASW Sub-Committee for consideration (see Adjunct 2 for the proposal).
- Japan, assisted by the USA and the IWC's Head of Science, will work intersessionally to prepare a report on the issue of local consumption versus commercialism, taking into consideration input provided by the native whalers and the ASW countries.

Adjunct 1

Agenda for Aboriginal Subsistence Whaling Working Group Meeting with Native Hunters

10 September 2014

Background

In April 2013, the Association of Traditional Marine Mammal Hunters of Chukotka, the Alaska Eskimo Whaling Commission, and the Makah Tribe submitted a letter to the Chair of the Aboriginal Subsistence Whaling Working Group (ASWWG) indicating their interest in providing input on the issues under consideration by the ASWWG. These native groups viewed these issues to be of paramount importance because of their impact on the subsistence uses of whales. They requested that the ASWWG convene a meeting with native hunters to hear their perspectives on aboriginal subsistence whaling and the issues the ASWWG is discussing, so that this input may inform ASWWG deliberations. The WG subsequently agreed to do so.

Agenda

09:00 Welcome and introduction – Dr. Michael Tillman, ASWWG Chair
- Welcome
- ASWWG role and responsibilities
- Introduction of ASWWG members
- Meeting objectives
- Outline for the meeting, including roles of participants
- Rapporteurs

Presentations by Native Hunters

(*20-25 minute present-ations, each followed by 5 minutes for clarifying questions. When making their presentations, native hunters should use their time to address the issues that the Commission has assigned to the Working Group in its Terms of Reference. Since the Working Group is well acquainted with the hunts, there should be no need to educate participants about them.*)
- Present views and opinions related to the short- and long-term issues identified by the ASWWG
- Present other information the speaker deems appropriate related to ASW in that nation

09:15 Greenland Fishers and Hunters Organization (KNAPK)
09:45 Association of Traditional Marine Mammal Hunters of Chukotka
10:15 Break
10:30 Bequian hunters
11:00 Alaska Eskimo Whaling Commission (AEWC)
11:30 Makah Tribe
12:00 Lunch
13:30 Discussion: ASWWG members' opportunity to ask questions, discuss information with native hunters and provide views
14:30 Discussion: Observers' opportunity to ask questions, discuss information from morning presentations and provide views
15:30 Wrap up – Dr. Michael Tillman, ASWWG Chair
15:45 Break
16:00 Closed-door meeting of the ASWWG members

Adjunct 2

Outline proposal for an expert workshop to assist the ASW Sub-Committee and the Commission with respect to improved procedures for considering ASW catch limits, with a focus on consideration of need

OBJECTIVES

The Commission will be reviewing catch limits for aboriginal subsistence whaling at its 2018 Biennial Meeting. The Commission has recognised a number of issues to be addressed that will assist the Commission in its consideration of such catch limits, recognising that the Rule of Procedure E states that the 'Commission shall make every effort to reach its discussions by consensus.' To this end it established an *Ad-Hoc* Aboriginal Subsistence Whaling Working Group in 2011.

Recognising the complexity of the topics assigned to that group and the need to agree to a revised process by the 2016 Biennial Meeting if it is to assist in reviewing catch limits at the 2018 Biennial Meeting, the proposal here is for an expert workshop to take place, probably in 2015, to *inter alia* develop a proposal or options for circulation well in advance of the 2016 meeting for consideration by the ASW sub-committee and Commission in 2016. In making this proposal, the positive experience from the previous expert Workshop held in 1979 was considered.

While the Workshop may consider aspects of all of the issues summarised on p.62, an important focus must be on consideration of 'need statements' in the broad sense. In no particular order at this stage, topics to be considered under this will include but not necessarily limited to:

(a) types of need (e.g. cultural and nutritional);
(b) cultural and sociological variation across whaling communities with regard to conditions of the hunt and methods of distribution of products, including evolution through time;
(c) description of the methods used to present information on need to the Commission in an informative manner including an account of types of need and how they are characterised as well as cultural and sociological variation;
(d) consideration of approaches to objectively review 'need statements' presented to the Commission; and
(e) food security considerations.

EXPERTISE

The Workshop will require experts on at least the following:

(1) the present and past subsistence whaling operations including representatives of whaling communities;

(2) anthropologists and sociologists with expertise in the appropriate geographical regions and subsistence communities; and
(3) nutritionists with expertise in native diets.

The possibility of collaboration with appropriate inter-governmental organisations and other stakeholders should be investigated.

STEERING GROUP

There is insufficient time at this meeting to develop a full list of participants, agenda, venue, precise dates, budget etc. necessary to ensure a successful workshop. It is therefore proposed that a Steering Group be established comprising the existing ASW Working Group (Argentina, Austria, Denmark, Japan, Russian Federation, Switzerland and the USA as well as the Head of Science and two Scientific Committee members). Past experience has shown that workshops function best when: (1) there are no more than about 40 participants; (2) sufficient time is allowed for the Workshop itself to develop its recommendations and finalise its report – for a complex issue such as this then four days may be appropriate; (3) papers on specific topics are requested, developed and submitted well in advance of the workshop; and (4) sufficient funding is necessary to support participation and costs associated with involvement of experts and other participants.

Adjunct 3

List of Participants

ARGENTINA
Juan Pablo Paniego
Miguel Iñíguez

AUSTRIA
Andrea Nouak

AUSTRALIA
Pam Eiser

DENMARK
Gitte Hundahl
Nette Levermann
Amalie Jessen
Øle Samsing

JAPAN
Joji Morishita
Takaaki Sakamoto
Dan Goodman
Naohito Okazoe

NORWAY
Lars Walløe

RUSSIAN FEDERATION
Valentin Ilyashenko
Masha Vorontzova
Olga Etylina

SWITZERLAND
Bruno Mainini

UK
Nicola Clark
Mark Simmonds

USA
Michael Tillman
Michael Gosliner
Ira New Breast
Ryan Wulff
Doug DeMaster
Roger Eckert
DJ Schubert

ALASKA ESKIMO WHALING COMMISSION
Harry Brower, Jr.
Jessica Lefevre
Chris Winter
Robert Suydam
Price A. Leavitt, Sr.
Taqulik Hepa

ASSOCIATION OF TRADITIONAL MARINE MAMMAL HUNTERS OF CHUKOTKA
Nikolay Ettytegin

KNAPK (ORGANIZATION OF FISHERMEN AND HUNTERS IN GREENLAND)
Leif Fontaine

MAKAH TRIBE
Keith Johnson
Brian Gruber
Greig Arnold

ANIMAL WELFARE INSTITUTE
Sue Fisher

CENTRO DE CONSERVACIÓN CETACEA (CHILE)
Elsa Cabrera

CETACEAN SOCIETY INTERNATIONAL
Heather Rockwell

DOLPHIN CONNECTION
Nancy Azzam

EASTERN CARIBBEAN COALITION FOR ENVIRONMENTAL AWARENESS
Marlon Mills

ENVIRONMENTAL INVESTIGATION AGENCY
Jennifer Lonsdale

FUNDACIÓN CETHUS
Carolina Cassani

HUMANE SOCIETY INTERNATIONAL
Rebecca Regnery

INSTITUTO DE CONSERVACION BALLENAS (ARGENTINA)
Roxana Schteinbarg

WHALE AND DOLPHIN CONSERVATION
Vanessa Tossenberger
Astrid Fuchs

WORLD ANIMAL PROTECTION
Joanna Toole

IWC SECRETARIAT
Greg Donovan

Annex G

Report of the Conservation Committee

Friday 12 September 2014, Portorož, Slovenia

SUMMARY OF MAIN OUTCOMES

Item and Agenda Item	Main outcomes
Item 3 Investigation of inedible 'stinky' whales	The reason some gray whales in Chukotka are 'stinky' is unknown. In order to make progress on this issue the Committee **recommended** that the item be moved to the Scientific Committee agenda.
Item 4 Ship strikes	The Conservation and Scientific Committees endorsed the recommendations of the Ship Strikes Workshop held in Panama in 2014 (IWC/65/CCRep01): • the IWC should increase its engagement with the maritime sector; • IWC member countries should place greater emphasis on publicising the Ship Strikes Database and the need to report ship strikes; • the IWC should develop a long-term working relationship with the International Maritime Organization (IMO); • legislation on ship strikes needs to be adopted both by relevant countries and by organisations such as IMO; • member countries should submit relevant information to the Scientific Committee through National Progress Reports; • the IWC should continue to fund the Ship Strikes Database co-ordinators; • the IWC should increase its efforts to publicise the Database to other intergovernmental and regional organisations, as well as all parts of the maritime sector; • the Scientific Committee should continue to provide advice and collaborate with other organisations and research groups especially with a view to further explore and build upon existing modelling approaches; and • exploration of the relationship between use of presence/absence data and presence-only data for habitat modelling. The Conservation Committee also endorsed the following Scientific Committee recommendations: • improved reporting of ship strikes, especially by Contracting Governments; • working with NOAA on the use of AIS (automatic identification system) shipping data; • action on prevention of ship strikes on the small (<100) Magellan Straits population of humpback whales and the blue whale population off Sri Lanka; • co-operation with ACCOBAMS over shipping routes near the Hellenic Trench; and • extension of the seasonal management area approach for North Atlantic right whales.
Item 5 Southern right whale population of Chile-Peru	The Conservation Committee noted that the population continues to be endangered and that the Scientific Committee has expressed concern regarding a wind farm project near this important habitat.
Item 6 Whalewatching	The Conservation Committee noted the following concerns reported by the Scientific Committee: • tourism involving feeding dolphins may make the boto in Brazil more susceptible to hunting; and • the continuing poor management of whalewatching on the small resident bottlenose dolphin population in Bocas del Toro, Panama. The Conservation Committee endorsed the recommendations from the Standing Working Group on Whalewatching (SWG-WW) to: • reconsider the recommendations from the Brisbane Whalewatching Operators' Workshop (IWC/65/CCRep02); • host a joint workshop with the Sub-Committee on Whalewatching prior to the next Scientific Committee to complete the outline of the handbook; and • complete the capacity building survey and provide suggestions for a suitable pilot area. Two new *ex officio* industry members, one each from the USA and Argentina will join the SWG-WW from 2014-16.

Item and Agenda Item	Main outcomes
Item 7 Whale sanctuaries	**Decadal review of the Southern Ocean Sanctuary** • It was proposed that the second decadal review of the Southern Ocean Sanctuary be undertaken under the terms of reference given in IWC/65/CC05 (Appendix 4 of this report); that the objectives of the Sanctuary be refined as outlined in Appendix 5 of this report; and that the Conservation Committee provide advice to the Commission that seeks to ensure that a key intent of the review process is to strengthen the conservation objectives of the Sanctuary. • The Scientific Committee prepared IWC/65/CCRep08 which outlines previous discussions and recommendations from the Committee, summarises actual and potential threats within and outside the Sanctuary and presents species summary accounts. • The Conservation Committee Chair agreed to liaise with the Scientific Committee to establish an intersessional group to oversee the process for the Southern Ocean Sanctuary review. **Proposal to establish a South Atlantic Sanctuary** • Argentina presented a proposal (IWC/65/08) for the establishment of a South Atlantic Sanctuary for whales. • The Scientific Committee sought clarification on the review process, noting that details of its review process could be finalised in 2015 and a review completed at the 2016 Annual Meeting.
Item 8 Conservation Management Plans	**Western Pacific gray whale CMP** The Scientific Committee supported the work of the IUCN Western North Pacific Gray Whale Advisory Panel. It expressed concern over the use of trap net fishing and a proposed development project in the Sakhalin area, and urged the Russian Federation to ensure the maintenance of Piltun Lagoon. The Scientific Committee recommends that oil and gas activities near gray whale feeding habitat only take place after careful planning for mitigation and monitoring and a rigorous environmental impact process. **Southwest Atlantic southern right whale CMP** The Scientific Committee expressed concern and the need for action with respect to the ongoing large annual mortality of calves at Península Valdés in Argentina. **Southeast Pacific southern right whale CMP** The Scientific Committee expressed concern over a proposed windfarm development at Isla del Chiloe. Conservation advances include maximum protection to whales when a sighting is recorded. **Update on additional CMP proposals** The recommendations of the Standing Working Group on Conservation Management Plans (CMP SWG) in IWC/65/CCRep05rev1 were endorsed. (1) That the Commission endorse the revised Terms of Reference for the CMP-SWG (Attachment A). (2) That the Scientific and Conservation Committees endorse the CMP-related recommendations from the two IWC Workshops on marine debris and cetaceans (in 2013 and 2014), including that: • the issue of marine debris is incorporated and addressed in existing (and future) CMPs; and • prior to developing a threat based marine debris CMP, if appropriate, the Working Group undertakes extensive consultation with relevant intergovernmental organisations, to consider how this fits best with existing initiatives. (3) That the Scientific Committee be invited to undertake further analysis on priority candidates of small cetaceans that would benefit from the implementation of a CMP. (4) That the Working Group collaborate with relevant Contracting Governments to develop an inventory of cetacean conservation measures in place in the Indian Ocean. (5) That the Scientific Committee be invited to review the Oceania Humpback Recovery Plan from a CMP perspective and make an assessment of whether there are gaps in the Plan that can be addressed by the Commission. (6) That the Commission endorse the draft CMPs work plan 2014-20 at Attachment B. (7) That the CMP Working Group meet during the intersessional period and report back to the Conservation Committee at IWC/66. The Scientific Committee identified the following candidate populations for CMPs: • based on threats: northern Indian Ocean blue whales, Mediterranean fin and sperm whales; and • based on population status: Arabian Sea humpback whales, and common minke whales in coastal waters of China, Japan and the Republic of Korea. The Conservation Committee agreed that new and existing CMPS should include an assessment of marine debris but noted that priority should be given to species-based CMPs. **Strategic planning** The Working Group recommended that a regional inventory for the Indian Ocean should be developed with range states.

Item and Agenda Item	Main outcomes
Item 9 Marine debris	• The Conservation Committee endorsed the recommendations from the Workshop (IWC/65/CCRep04) and in particular that: (1) the IWC and its Secretariat work together with the Secretariats of the other major intergovernmental organisations (IGOs) and regional marine fisheries organisations (RMFOs) relevant to this issue; and (2) the IWC Scientific Committee should explore ways of combining estimates of oceanic debris and information on cetaceans to identify priorities for mitigating and managing the impacts of marine debris on cetaceans. The Workshop endorsed the planned IWC Workshop (anticipated March-April 2016) on prevention of the incidental capture of cetaceans. • The Conservation Committee also recommended that the marine debris issue should be made a standing agenda item of the Scientific Committee; and that the potential for a CMP for marine debris should be explored.
Item 10 Voluntary fund for small cetacean conservation research	• Appreciation was expressed to countries and NGOs that have contributed to the Voluntary Fund. • A 'task team' approach was recommended by the Scientific Committee to respond to situations where urgent attention is required to protect small cetacean populations. The approach will allow the Sub-Committee on Small Cetaceans to more swiftly evaluate a situation and provide advice and recommendations intersessionally.

1. INTRODUCTORY ITEMS

A list of participants is given as Appendix 1.

1.1 Appointment of Chair

Lorenzo Rojas-Bracho (Mexico) was appointed Chair.

1.2 Appointment of rapporteurs

Harriet Gillett, Andrea Cooke, Pablo Sinovas, Sarah Ferriss and Tim Inskipp were appointed as rapporteurs.

1.3 Review of documents

The list of documents is given as Appendix 2.

2. ADOPTION OF AGENDA

The Agenda given in Appendix 3 was adopted unchanged.

3. INVESTIGATION OF INEDIBLE 'STINKY' GRAY WHALES

The Russian Federation provided an update on the incidence of 'stinky' gray whales in Chukotka. This has been an issue since the 1970s when hunters in the Chukchi Sea began to notice some whales had a chemical or medicinal smell. The meat was inedible and made some people ill if eaten. The hunters have observed that the number of 'stinky' whales is growing year on year, and recently other marine mammals and fish seemed to have the same medicinal smell, as well as some birds. By the early 2000s it was estimated that ~10% of whales were 'stinky', and each year ~2-7 are caught. Last year two were landed and so far this year a further two have been caught. Experienced hunters can tell if a whale is 'stinky' whilst at sea if they can smell the whale's blow, but this does not always identify a 'stinky' whale.

3.1 Report on progress

The reason some whales are 'stinky' is not known. There is ongoing work on the issue at Moscow State University, where the smell has been found to be contained in the lymphatic inter-cellular liquid. The work is hampered by problems in transporting frozen tissue samples the long distance between Chukotka and Moscow, as the process seems to degrade the samples.

The Russian Federation stated that because the meat from 'stinky' whales is inedible, the hunters believe that they should not be included in the catch quotas, but should be recorded as struck and lost. The Russian Federation stated that the Commission has previously agreed to this.

3.2 Committee discussions and recommendations

Austria stated that there does not seem to have been recent progress in scientific research into this issue and suggested the issue would be better discussed in the Scientific Committee.

The Committee **recommended** that this item be moved to the Scientific Committee agenda.

4. SHIP STRIKES

4.1 Report of the Scientific Committee

The Chair of the Scientific Committee summarised the recommendations on ship strikes from the last two Scientific Committee meetings. Further information can be found in Item 7.4 of IWC/65/Rep01(2013)[1] and Item 7.2 of IWC/65/Rep01(2014)[2].

The Scientific Committee expressed appreciation of the work of the two ship strike co-ordinators (Ritter and Panigada) and recommended continuation of this work. A large component of their work is to encourage the collection and organising verification of data through the IWC Global Ship Strikes Database which is important to understanding the problem and in assisting with mitigation approaches.

The Scientific Committee welcomed co-operation with the Conservation Committee's Ship Strikes Working Group, endorsed the recommendations of the Panama Ship Strikes Workshop (IWC/65/CCRep01[3]), and also recommended:

- improved reporting of ship strikes, especially by Contracting Governments;
- working with NOAA on the use of AIS (automatic identification system) shipping data;
- action on prevention of ship strikes on the small (<100) Magellan Straits population of humpback whales and the blue whale population off Sri Lanka;
- co-operation with ACCOBAMS over shipping routes near the Hellenic Trench; and
- extension of the seasonal management area approach for North Atlantic right whales.

4.2 Report from the Ship Strikes Working Group

4.2.1 Ship Strikes Workshop

Belgium summarised the Report of the Ship Strikes Workshop held in Panama in 2014 (IWC/65/CCRep01).

[1]Published as: *J. Cetacean Res. Manage. (Suppl.)* 15. [2014].
[2]Published as: *J. Cetacean Res. Manage. (Suppl.)* 16. [2015].
[3]Published in this volume.

The Workshop was attended by scientists from the wider Caribbean region and representatives from the shipping industry as well as other local and regional organisations. The Workshop reviewed progress on the recommendations from the previous IWC Workshop on ship strikes held in Beaulieu in 2011[4], and reviewed the current global situation, with an emphasis on areas where there are data gaps.

Key recommendations were highlighted. The Workshop considered the highest current priority for the IWC is to emphasise collection and reporting of data to the IWC Global Ship Strikes Database and assist in the development of mitigation measures. A variety of technological approaches were evaluated, but the general Workshop conclusion was that none of the solutions available at the moment are perfect or are applicable worldwide. Instead, a combination of complementary tools adapted to the characteristics of the concerned area, coupled with adequate education measures, is the best option to significantly reduce the risk of ship strikes. The Workshop agreed that measures that separate whales from vessels (or minimise co-occurrence) in space and time are the most effective, such as developing Traffic Separation Schemes (TSSs) and speed restrictions. The Workshop emphasised that the most effective method to ameliorate lethal strikes available at present is for ships to travel at reduced speed.

With respect to the International Maritime Organization (IMO), the Workshop recommended that the IWC builds a long-term working relationship with this body and that IWC representatives should routinely attend relevant sessions of the IMO's Marine Environment Protection Committee, MEPC. More particularly, the Workshop recommended the submission of a 'Substantive Document' to MEPC 68 in May 2015.

Priority actions for the IWC are:

- the IWC should increase its engagement with the maritime sector;
- IWC member countries should place greater emphasis on publicising the Ship Strikes Database and the need to report ship strikes;
- member countries should submit relevant information to the Scientific Committee through National Progress Reports;
- the IWC should continue to fund the Ship Strikes Database co-ordinators;
- the IWC should increase its efforts to publicise the database to other intergovernmental and regional organisations, as well as all parts of the maritime sector;
- the Scientific Committee should continue to provide advice and collaborate with other organisations and research groups especially with a view to further explore and build upon existing modelling approaches; and
- exploration of the relationship between use of presence/absence data and presence-only data for habitat modelling.

4.2.2 Ship Strikes Working Group

Belgium summarised the other work of the Ship Strikes Working Group (SSWG) reported in IWC/65/CCRep07. There had been no report from this group for three years due to the sad loss of its founder, Alexandre de Lichtervelde, but the work has continued. Many of the recommendations from this group are in common with the Workshop recommendations above, for example that the IWC should develop cooperation with IMO, and that Contracting Governments should promote and make greater use of the Ship Strikes Database.

The database has now received approximately 1,200 reports of ship strikes, both current and historical. New information on ship strikes related work by Argentina, Australia, Belgium, Chile, Italy, New Zealand, Spain (including the Canary Islands), the UK and the USA is summarised and also given in Voluntary Conservation Reports from several countries. Non-members including Sri Lanka and Canada have submitted information on their work on ship strikes. The IWC website is being used to increase general awareness of the Commission's work on ship strikes. The work of the ship strike coordinators was key to data gathering and populating the IWC Global Ship Strikes Database, outreach and communication, and database management.

The SSWG made several other recommendations. Legislation on ship strikes needs to be adopted both by relevant countries and by organisations such as the IMO. The group is working with several IGOs, for example the Convention on Migratory Species (CMS), ACCOBAMS[5], ASCOBANS[6], as well as NGOs such as WWF and Whale and Dolphin Conservation (WDC). Two shipping guidance documents have been developed with the Scientific Committee.

Finally Belgium noted that several governments and groups have made financial contributions to the SSWG – the Netherlands, USA and UNEP-CEP-SPAW jointly funded the Panama Workshop.

4.3 Committee discussions and recommendations

Several countries commended Belgium and the Chair of the SSWG, Frederic Chemay, for their valuable work on ship strikes. Belgium emphasised that it is willing to continue to take the lead on this issue in the future.

The IWC Secretariat provided a statement from the Secretariat of the Permanent Commission for the South Pacific (CPPS) that was relevant to the priority actions in the Panama Workshop report. Following on from recent cooperative work with the IWC, CPPS will support workshops on ship strikes and entanglement in Cartagena, Colombia 1-5 December 2014, in conjunction with meetings of the Sociedad Latinoamericana de Especialistas de Mamiferos Acuaticos (SOLAMAC-SOMEMA), and have invited the IWC Secretariat to participate. CPPS have recently published the *Atlas on the Distribution, Migratory Routes, Critical Habitats and Threats for large Whales in the Eastern Pacific*, containing maps on whale distribution and habitat modelling exercises for five species[7]. The Commission will send a representative to these meetings if possible.

Denmark noted that the IWC has a dual mandate: management and conservation. Denmark did not originally support establishment of the Conservation Committee but commended it for its positive achievements. The recent Arctic Workshop is a good example of how the IWC works well, as well as the ongoing work on entanglement.

[4]IWC. 2011. Report of the Joint IWC-ACCOBAMS Workshop on Reducing Risk of Collisions between Vessels and Cetaceans, 21-24 September 2010, Beaulieu-sur-Mer, France. Paper IWC/63/CC8 presented to the Annual Meeting of the International Whaling Commission, July 2011, Jersey, CI (unpublished). 42pp. [Paper available from the Office of this Journal].

[5]Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area.

[6]Agreement on the Conservation of Small Cetaceans in the Baltic, North East Atlantic, Irish and North Seas.

[7]The document is available at: *http://cpps.dyndns.info/cpps-docs-web/planaccion/docs2014/publicaciones/serie-estudios-regionales/SER1.pdf.*

The UK said that it continued to support the SSWG, recognised the importance of the Ship Strikes Database, and noted that the Scientific Committee's work on ship strikes should continue. It re-emphasised the recommendations for the IWC to discuss mitigation measures with other bodies. The UK noted that UK scientists have been closely involved in assessing the potential for impacts on blue whale populations in Sri Lanka and that they would be fully supportive of the IWC reaching out to the Sri Lankan government to offer its assistance and support. The Scientific Committee has also contacted Sri Lanka on this matter and the Secretary of the Indian Ocean Marine Affairs Co-operative has visited the Secretariat.

The USA considered the Workshops to have been well-attended and the ship strikes work in the Commission to be positive. The USA supported the recommendations of the Scientific Committee and the SSWG.

Belgium mentioned the five-year strategic plan on ship strikes, and said that work on this would continue in the SSWG. The recommendations detailed here are essential for the five-year strategic plan. Once they have been endorsed, a timeline can be developed, bringing together the work of the Scientific Committee, ship strikes coordinators, etc. The five-year plan will be ready for consideration at IWC/66. Austria thanked Belgium for taking the lead on the five-year plan.

Argentina noted in its Voluntary Report (IWC/65/CC11) that since 2009, during the right whale season from June to November, a 10 knot speed limit has been imposed in the migration corridor. Research is ongoing on the southern right whale population, with a programme to tag whales to log movement patterns. Two of 116 dead whales examined by the Southern Right Whale Health Monitoring Program in 2012 had evidence of ship strike trauma.

The USA added that two new IMO-approved TSS measures have been implemented in the Santa Barbara Channel to reduce ship strikes to blue whales. The USA has also developed a 'whale alert' app, which can now be used on both east and west coasts to track whale movements.

The Conservation Committee **endorsed** the recommendations of the Scientific Committee and Ship Strikes Working Group.

5. SOUTHERN RIGHT WHALE POPULATION OF CHILE-PERU

This issue has been a priority since 2008.

5.1 Report of the Scientific Committee on Chile-Peru right whales

The Chair of the Scientific Committee noted that the population continues to be endangered. He was pleased to report information on the southernmost sighting of a mother and calf and documentation of reproductive behaviour near Isla del Chiloe. The Scientific Committee expressed concern and noted the need for action regarding information received on a wind farm project near this important habitat. See also Item 8.

5.2 Update on Contracting Government progress

Updates are given under Item 8.3.

5.3 Committee discussions and action arising

There was no discussion under this item.

6. WHALEWATCHING

In 2011 the Commission reviewed and updated the terms of reference for the Conservation Committee's Standing Working Group on Whalewatching (SWG-WW) and expanded its membership to include two members of the Scientific Committee. In 2012 the Commission adopted a Five-Year Strategic Plan for Whalewatching and the Working Group has made progress against the objectives in this plan. Scientific aspects of whalewatching are discussed by the Scientific Committee in response to a request in Resolution 1994-14.

6.1 Report from the Scientific Committee

The Chair of the Scientific Committee introduced Item 15 of IWC/65/Rep01(2014). He noted the following main points.

With regard to assessments of the effect of whalewatching on cetaceans, there is concern that tourism involving feeding dolphins may make the boto in Brazil more susceptible to hunting.

There is continued serious concern regarding the poor management of whalewatching on the small resident bottlenose dolphin population in Bocas del Toro, Panama. With respect to extreme situations such as Bocas del Toro, the Scientific Committee suggested that a more focussed mechanism is needed to bring recommendations to the attention of the relevant governments and the Conservation Committee besides a simple presentation of its report.

The Scientific Committee recommended consideration of the IWC guiding principles if swim-with-whales is to be considered for Hervey Bay in Australia; and the monitoring of swim-with activities in Japan.

With respect to the process to 'review of whalewatching in the regions near to the location of the Scientific Committee meeting', it was agreed that more effort to obtain information is required. To highlight the need for information a mechanism was developed in 2014 to improve this with advance circulation of an initial review document for comment. It was suggested that the Conservation Committee could assist in its distribution.

In 2013 the Scientific Committee reviewed the Commission's Five-Year Strategic Plan for Whalewatching and in 2014 it considered a draft outline of the Plan with more details of what it should contain and where and how the Scientific Committee can complete its contribution.

In order to clarify the relationship between the Scientific Committee and the Commission over the development of the Handbook, it was agreed that the two whalewatching sub-committee convenors and the Conservation Committee Chair should work together.

It was also agreed that a budget request should be developed and forwarded to the SWG-WW for submission to the Commission.

The Scientific Committee discussed emerging whalewatching industries of concern, and focused on whalewatching in Oman particularly with respect to the humpback whale population of the Arabian Sea and local populations of *Sousa*. It welcomed an initiative to guide and regulate the industry and hold associated workshops and recommended continuation of these efforts.

Chile noted that recommendations from previous years to improve management of the whalewatching industry had not all been fully carried out and considered that these should be discussed at this meeting.

6.2 Report from the Conservation Committee's Standing Working Group on Whalewatching (SWG-WW)

The Chair of the SWG-WW presented the group's report, IWC/65/CCRep06. It has developed the outlines of a web-based living Handbook and will continue to develop these during the next intersessional period.

The SWG-WW has agreed a draft survey for capacity building and recommends that, once completed, it should be distributed to an initial pilot region for feedback.

The Chair noted the document produced by the Secretariat, and attached as Appendix 2 to the report, providing thoughts on conservation objectives in the context of whalewatching and the Five-Year Plan, and including costs for uploading the Handbook on the website.

For the next period the SWG-WW will reconsider the recommendations from the Brisbane Whalewatching Operators' Workshop and will host a joint workshop with the Sub-Committee on Whalewatching prior to the next Scientific Committee to complete the outline of the Handbook. The SWG-WW will also complete the capacity building survey and provide suggestions for a suitable pilot area. Two new *ex officio* industry members, one each from the USA and Argentina will join the SWG-WW from 2014-16.

6.3 Committee discussions and recommendations

Belgium supported the work of the SWG-WW and the Handbook and noted that whalewatching provides income and social benefits to coastal communities throughout the world and thus contributes to development, and has wide ranging socio-economic implications. To be sustainable whalewatching should be managed wisely from the beginning and the Handbook will be a valuable tool to bring expertise to local communities.

Argentina observed the SWG-WW had made great progress. It was pleased to be one of the pioneers of the whalewatching industry and looked forward to continued collaboration with the SWG-WW.

The Chair thanked the SWG-WW and the Chair of the group, Ryan Wulff, for his leadership and commitment.

The Conservation Committee **endorsed** the recommendations of the Scientific Committee and the SWG-WW.

7. WHALE SANCTUARIES

7.1 Decadal review of the Southern Ocean Sanctuary

The Southern Ocean Sanctuary was established in 1994 through paragraph 7(b) of the Schedule to the International Convention for the Regulation of Whaling. This paragraph states that the Sanctuary shall be reviewed ten years after its initial adoption and at succeeding ten year intervals. The first review was undertaken in 2004 and a second review is due in 2014.

Australia presented document IWC/65/CC05, which provides background information on the establishment and first decadal review of the Southern Ocean Whale Sanctuary and proposes a way forward for the 2014 review.

The first review of the Sanctuary took place in 2004 and agreed that:

- whales are not effectively protected from whaling in the Sanctuary, because such sanctuaries only apply to commercial whaling, and because (apart from stocks that migrate to the Indian Ocean Sanctuary) whales also migrate out of the Sanctuary boundaries;
- the boundaries of the Sanctuary were appropriately established for some, but not for all, stocks;
- it was not possible to completely evaluate the effectiveness of the Sanctuary because the scientific objectives are not clear and are not associated with quantifiable performance measures; and
- the Commission noted the report of the Scientific Committee and further endorsed seven recommendations of the 2004 review that would improve future review processes and help incorporate marine protected area concepts into IWC Sanctuaries. During the intervening decade since the review, no action was undertaken by the Commission to follow up on review recommendations.

This poses a number of challenges for the 2014 review as it creates uncertainty in regards to the appropriate terms of reference and evaluation criteria that should be used. A number of the recommendations place a greater emphasis on management approaches, some of which fall outside the powers of the IWC, rather than evaluation criteria for existing sanctuaries. Furthermore, conducting the 2014 review exclusively from Resolution 2002-1 guidance would not utilise modern conservation concepts and approaches for IWC Sanctuaries. Taking either of these approaches is unlikely to provide insight beyond the 2004 review's findings or strengthen the purpose of the Sanctuary as a conservation measure to protect whales.

In view of this, Australia proposed that: clear Terms of Reference for conducting the review be established as part of the second decadal review process; refined objectives be developed that better articulate the purpose of the Sanctuary (as recommended in the 2004 review); and draft terms of reference for conducting the 2014 review of the Sanctuary, and draft refined objectives to articulate the purpose of the Sanctuary (see Appendices 4 and 5). Australia welcomes the Committee's views on the review of the Sanctuary.

7.1.1 Report of the Scientific Committee

The Chair of the Scientific Committee drew attention to Item 18.1 of IWC/65/Rep01(2014) and highlighted that the Terms of Reference for the review process can be found in Annex R to the report. In 2014, the Scientific Committee agreed that the review process needed to be considered further at its 2015 Annual Meeting. Working intersessionally, the Scientific Committee prepared IWC/65/CCRep08, which outlines previous discussions and recommendations from the Committee, summarises actual and potential threats within and outside the Sanctuary and presents species summary accounts.

7.1.2 Committee discussions and recommendations

France, the USA, Belgium, New Zealand and Argentina expressed support for the proposal submitted by Australia.

The Chair noted that, as one of the recommendations was to establish a joint meeting of the Scientific and Conservation Committees, the Chair of the Conservation Committee would liaise with the Scientific Committee to establish the membership.

Australia, France, the UK and the USA expressed an interest in being members of the joint Steering Committee. The Chair of the Conservation Committee agreed to chair the joint Committee.

7.2 Proposal to establish a South Atlantic Sanctuary

7.2.1 Introduction of proposal

Argentina presented a proposal for the establishment of a South Atlantic Sanctuary for Whales (IWC/65/08), prepared by Argentina, Brazil, South Africa and Uruguay. Argentina noted that suggestions made on previous versions of the

proposal had been incorporated and that the proposal addresses the various threats faced by whales in the South Atlantic. It drew attention to the Montevideo Declaration, in which several countries supported a proposal for the creation of the South Atlantic Sanctuary and noted that the proposal is in accordance with the International Convention for the Regulation of Whaling (ICRW). Argentina highlighted the benefits of the proposed Sanctuary to coastal communities in the region and as a platform to promote non-lethal uses of cetaceans such as whalewatching. Argentina further noted that the proposal has gained increased support each time it has been presented.

7.2.2 Report of the Scientific Committee

The Chair of the Scientific Committee drew attention to Item 18.2 of IWC/65/Rep01(2014) and highlighted the Committee's request for clarification on the appropriate review process and the role of outside experts. On receipt of advice from the Commission, the Scientific Committee could finalise details of its review process at the 2015 Annual Meeting and complete its review at the 2016 Annual Meeting.

7.2.3 Committee discussions and recommendations

Uruguay, Australia, Panama, Mexico, Chile, Spain, Peru, USA, Germany, UK, France, New Zealand, Belgium, Monaco, South Africa, Sweden, Finland and Slovenia expressed their full support of the South Atlantic Sanctuary proposal, with Australia, Panama, UK, Germany and New Zealand stressing the benefits that would be derived from the establishment of the Sanctuary.

Uruguay highlighted the Montevideo Declaration (IWC/65/23) which details the countries which support the creation of a Sanctuary in the South Atlantic (including several African countries: Angola, Benin, Cape Verde, Cameroon, Congo, Cote d'Ivoire, Ghana, Guinea, Equatorial Guinea, Liberia, Namibia, Nigeria, Democratic Republic of Congo, Senegal, South Africa and Togo). Uruguay noted that a sanctuary was approved in Uruguayan waters. Mexico noted that all of their territorial waters are already a whale sanctuary.

The Russian Federation noted that it could not support the proposal, as it did not consider that the Sanctuary is needed when there is already a moratorium on whaling in place. Also, it did not believe that whales were threatened in the region or that the Sanctuary would benefit them. Furthermore, the proposal indicates that the Soviet Union had been involved in illegal or 'pirate' whaling in the South Atlantic. The Russian Federation considered these allegations to be based on unreliable data.

8. CONSERVATION MANAGEMENT PLANS

In 2008, the IWC adopted Conservation Management Plans as an adaptive, flexible and tailored management tool to improve the conservation outcomes for the most at-risk cetacean populations.

Work is progressed through the Conservation Committee's Standing Working Group on Conservation Management Plans and through the Scientific Committee's work on whale stocks. The reports of the Standing Working Group meetings from 2013 and 2014 (IWC/65/CCRep03 and IWC/65/CCRep05) were discussed, in addition to the reports of the Scientific Committee (IWC/65/Rep01(2013 and 2014)). Countries receiving funding for CMPs have been asked to provide an estimate of funds required to further work relating to CMPs to aid in the budgeting process for the next four years.

8.1 Western Pacific Gray Whale CMP

8.1.1 Scientific Committee update

The Chair of the Scientific Committee presented an update on the Scientific Committee's discussions on western gray whales, as found under Item 10.6 of IWC/65/Rep01(2013) and Items 9.2 and 10.6 of IWC/65/Rep01(2014).

In the light of recent information on movements of gray whales known to feed off Sakhalin Island to the eastern North Pacific (it had been thought that they only migrated down the western North Pacific past Japan, Korea and China), the Scientific Committee has begun to examine the rangewide status of gray whales throughout the whole North Pacific. A Workshop was held in April 2014[8], and a work plan to complete the assessment has been developed. The importance of sharing data (including photographs and genetic samples) as part of this assessment was recommended.

With respect to the western North Pacific, the Scientific Committee welcomed the conservation and research efforts of Japan and encouraged its continuation. It reiterated its support for the work of the IUCN Western North Pacific Gray Whale Advisory Panel. However, the Committee expressed concern over the use of trap net fishing in the Sakhalin area and recommended that the appropriate authorities prohibit their use on these sensitive feeding and nursery grounds. The Committee also expressed serious concern over a proposed development project on the eastern shore of Sakhalin Island by Exxon Neftegaz Limited, requested additional information and urged the Russian Federation to ensure the maintenance of Piltun Lagoon.

The Scientific Committee recommended that oil and gas activities near gray whale feeding habitat only take place after careful planning for mitigation and monitoring and a rigorous environmental impact process.

8.1.2 Co-ordinator's update

The Russian Federation noted that it fully supported, and had participated in, the work of the IUCN Western North Pacific Gray Whale Advisory Panel. It highlighted a Memorandum of Cooperation that it hoped the range States would sign during the current session of IWC.

8.1.3 Committee discussions and action arising

The UK noted with concern the Critically Endangered status of the population and welcomed range states and companies continuing to engage with the Western Gray Whale Advisory Panel and the IWC Scientific Committee. However, it expressed concern regarding the development of the salmon set-net fishery in the feeding areas off Sakhalin and the proposed development of a temporary facility on the eastern shore of Sakhalin Island. It urged the relevant authorities to take all possible steps to ensure this does not result in any additional declines in the gray whale population.

8.2 Southwest Atlantic Southern Right Whale CMP

8.2.1 Scientific Committee update

The Chair of the Scientific Committee presented an update on the Committee's discussions of southwest Atlantic southern right whales, as found at Item 10.6.2 of IWC/65/Rep01(2013) and Item 10.7.1.2 of IWC/65/Rep01(2014).

The Scientific Committee completed its assessment of southern right whales in 2012. It subsequently received new

[8]*Published as:* International Whaling Commission. 2015. Report of the Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales, 8-11 April 2014, La Jolla, California, USA. *J. Cetacean Res. Manage. (Suppl.)* 16:487-528.

information in 2013 and 2014 from research efforts in the Southern Hemisphere including valuable results from long-term monitoring projects.

The Scientific Committee expressed continued concern and the need for action with respect to the ongoing large annual mortality of calves at Península Valdés in Argentina. It supported the holding of a workshop on gull harassment and commended the work of a dedicated research group addressing mortality which will support the work of the CMP.

The Scientific Committee supported the work of the CMP Working Group and its coordinator.

8.2.2 Co-ordinator's update

Argentina noted that the southwest southern right whale CMP was endorsed by the IWC in 2012. Many activities have been undertaken to implement the CMP, which were presented to the Scientific Committee in 2014.

Argentina highlighted the Workshop held in August 2014 on kelp gull harassment of southern right whales. The Workshop reviewed new information on mortality and re-analysed previous hypotheses. It included discussion of a new hypothesis that the Península Valdés population has reached its carrying capacity. The report of the workshop will be presented to the Scientific Committee in 2015. Argentina suggested that the relevant expert Dr Enrique Crespo should be invited to participate.

8.2.3 Committee discussions and action arising

The Conservation Committee **recommend** that the Scientific Committee review the new hypothesis and invite the expert to attend a future meeting.

8.3 Southeast Pacific Southern Right Whale CMP

8.3.1 Scientific Committee update

The Chair of the Scientific Committee noted that his update had been presented under Item 5.1.

8.3.2 CMP Working Group update

Chile summarised the activities undertaken to implement the management plan, including scientific research undertaken.

Conservation advances include a contingency plan involving the Navy to afford maximum protection to the whales when a sighting is recorded. Fishing activities are prohibited while whales are crossing the area. Chile noted that they are preparing for a workshop next year on entanglement.

8.3.3 Committee discussions and action arising

No further comments on this CMP were made.

8.4 Update on additional CMP proposals

Australia reported on the work of the Standing Working Group on Conservation Management Plans (SWG-CMPs) as outlined in IWC/65/CCRep03 and IWC/65/CCRep05. The recommendations from the latter report are as follows.

- That the Commission **endorse** the revised Terms of Reference for the SWG-CMPs.
- That the Scientific and Conservation Committees **endorse** the CMP-related recommendations from the two IWC Workshops on marine debris and cetaceans (in 2013 and 2014), including that:
  - the issue of marine debris is incorporated and addressed in existing (and future) CMPs; and
  - prior to developing a threat based marine debris CMP, if appropriate, the Working Group undertakes extensive consultation with relevant intergovernmental organisations, to consider how this fits best with existing initiatives.
- That the Scientific Committee be **invited** to undertake further analysis on priority candidates of small cetaceans that would benefit from the implementation of a CMP.
- That the SWG-CMPs **collaborate** with relevant Contracting Governments to develop an inventory of cetacean conservation measures in place in the Indian Ocean.
- That the Scientific Committee be **invited** to review the Oceania Humpback Recovery Plan from a CMP perspective and make an assessment of whether there are gaps in the Plan that can be addressed by the Commission.
- That the Commission **endorse** the draft Conservation Management Plans Work Plan 2014-20.
- That the SWG-CMPs **meet** during the intersessional period and report back to the Conservation Committee at IWC/66.

8.4.1 Developing a list of priority species for CMPs – SWG-CMP update

The SWG-CMPs considered the priority list of cetaceans compiled by the Scientific Committee and hoped that range states of the Arabian Sea humpback whale would prepare a CMP. The SWG-CMPs also recommended that the Scientific Committee undertake further analysis on which species of small cetaceans would benefit from CMPs.

8.4.2 Development of threat-based CMPs – Report of the Scientific Committee

The Chair of the Scientific Committee presented an update on the Scientific Committee's discussions as summarised at Item 21 of IWC/65/Rep01(2013) and Item 21 of IWC/65/Rep1(2014).

Regarding population-based CMPs, the Scientific Committee had agreed for the focus in the 2013 discussion to be on large whales. The task is much larger and more complex for small cetaceans and the Scientific Committee requests guidance from the Commission as to whether or not it should develop a priority list of populations of small cetaceans for which CMPs might be of value. At the 2014 Scientific Committee meeting it was noted that the boto and franciscana might be suitable candidates.

In addition to the previous three populations for which CMPs are already in place, the Scientific Committee identified populations that could be considered for a CMP if supported by the range states. The first group is based on population status: (1) Arabian Sea humpback whales; (2) common minke whales in the coastal waters of China, Japan (especially the west coast) and Republic of Korea; (3) North Atlantic right whales; and (4) North Pacific right whales. The second group is based on knowledge of threats: (1) blue whales in the northern Indian Ocean; (2) fin whales in the Mediterranean; and (3) sperm whales in the Mediterranean. There are other candidate populations, which will be re-evaluated for priority listing as additional information becomes available.

In terms of threat-based CMPs, i.e. CMPs that apply to a single threat requiring international collaboration that may affect multiple species or large habitats, the Scientific Committee recommended a review of the template and criteria to enable better consideration of options for a threat-based approach. Furthermore it agreed that the issue of marine debris is appropriate for consideration as a first threat-based CMP.

8.4.3 Committee discussions and action arising

Chile emphasised that it supports CMPs for small populations and resident stocks, even if they have only one range state.

The Chair of the SWG-CMP outlined that considerable discussion had taken place with regard to the development of a threats-based CMP for marine debris. As outlined in SWG-CMP's report (IWC/65/CCRep05rev1) it is recommended that all future CMPs include dedicated sections on marine debris. Further discussion is required as to the merits of a threat based CMP for marine debris and it recommended that this be referred to the Scientific Committee

The Conservation Committee **agreed** that work on new and existing CMPS should include an assessment of marine debris as a potential future CMP but noted that immediate priority should be given to species-based CMPs since resources are limited.

8.5 Strategic planning

8.5.1 Regional cetacean conservation measures

The SWG-CMPs **recommended** that a regional inventory for the Indian Ocean should be developed with range states.

8.5.1.1 WORKING WITH IGOS, NGOS AND OTHERS TO DEVELOP AND DELIVER CMPS

No comments were made under this item.

8.5.1.2 CMP STRATEGIC PLAN

No comments were made under this item.

8.6 Progress Report by the Standing Working Group on CMPs

The SWG-CMPs noted that, as a priority, funding should be given to actions and research priorities already identified in CMPs; these should be a priority for Scientific Committee funding.

Australia noted that the voluntary fund contained £157,947 at the end of August 2014. The funding of CMP activities must be on a solid financial basis and the work cannot rely on voluntary contributions, which may become depleted. The Chair stated that the budget would require further discussions.

The Conservation Committee **endorsed** the recommendations of the SWG-CMPs in IWC/65/CCRep05rev1.

9. MARINE DEBRIS

9.1 Report from the Scientific Committee

The discussions of the Scientific Committee are reported in IWC/65/Rep01 (2013)[9] and Item 12.6 of IWC/65/Rep01 (2014). The issue was addressed by a two-phase Workshop approach.

The first, primarily scientific Workshop had been completed. Subsequently, the Scientific Committee agreed that: (1) legacy and contemporary marine debris have the potential to be persistent and lethal to cetaceans and represent a global management challenge; and (2) entanglement in and intake of active and derelict fishing gear and other marine debris may have lethal and sub-lethal effects on cetaceans. The Scientific Committee endorsed a number of recommendations on this topic which were forwarded to the second Workshop which was held recently in Honolulu, (see Item 9.2).

The Scientific Committee also recommended discussions with the *ad hoc* Progress Report group and the Secretariat with the aim of adding agreed fields for inclusion of records on marine debris in the online submissions portal.

9.2 Committee discussion and recommendations

The UK introduced the report on the second Workshop (IWC/65/CCRep04[10]) held in Honolulu, which was attended by experts from 10 countries and other relevant bodies and organisations. The Workshop reviewed initiatives to address marine debris practically, particularly entanglement. The issue of marine debris is the subject of several important international and national initiatives, which would benefit from improved co-ordination. Although the effects on some cetacean species are not known, that should not preclude efforts to remove existing debris and prevent future accumulation.

It was also agreed that the recorded level of cetacean entanglements were unacceptable from an animal welfare perspective.

The Workshop further agreed that the IWC's primary contribution should be to ensure that cetacean-related issues are adequately represented within existing initiatives and that its strong scientific and other expertise is made available in collaborative efforts.

The Workshop made a number of recommendations including that, as a priority, the IWC and its Secretariat work together with the Secretariats of the other major IGOS and RMFOs relevant to this issue. It called on the IWC Scientific Committee to explore ways of combining estimates of oceanic debris and information on cetaceans to identify priorities for mitigating and managing the impacts of marine debris on cetaceans. The workshop also looked at how outreach can be improved including highlighting the IWC's own work and potential in this. Finally, the Workshop endorsed the planned IWC Workshop (anticipated March-April 2016) on prevention of the incidental capture of cetaceans.

The excellent progress made by the IWC's disentanglement programme was highlighted and all members and non-members of the IWC were encouraged to take advantage of the IWC disentanglement network especially in those regions where entanglement represents a threat at the population level (e.g. western Pacific, eastern South Atlantic, and Arabian Sea).

The Conservation Committee was urged to endorse the recommendations facilitating implementation of the actions that were identified. There was also the option to explore whether a threat-based Marine Debris CMP would help to consolidate and direct this work.

The USA suggested the Conservation Committee recommend that marine debris be included as a standing item on the Scientific Committee agenda in future.

Austria offered to host a small workshop to progress the issue of marine debris including of a threat-based CMP.

Belgium recommended that a CMP for marine debris be developed and encouraged the Secretariat to maintain communications with other organisations on this matter. The UK encouraged the SWG-CMPs to establish a Marine Debris sub-group intersessionally, to further consider this issue. It suggested ensuring appropriate engagement from scientists, managers, and decision-makers to take forward the Workshop recommendations

France referred to SC/65b/HIM02, reporting a calf and a female entangled in fishing gear, which appeared to be a local artisanal Fish Aggregating Devices (FAD) that are generally constituted of a variety of second use materials, including discard nets and ropes and a variety of plastic floats. If true, this would represent the first record of large whale entanglement in this type of fishing gear. The case re-emphasises the importance of the large whale disentanglement workshops organised by IWC; the issue of entanglement in either ghost (marine debris) or active (bycatch) fishing gears for sperm whales; and the

[9] *J. Cetacean Res. Manage.* 15 (Suppl.), 2014: p.18.
[10] Published in this volume.

rapidly expanding FADs as a potential source of cetacean entanglement, possibly underreported in the past.

The Secretariat thanked France for allowing it to highlight this entanglement case at the recent (June 2014, Rome) meeting of the Regional Fishery Body Secretariats Network (RSN). It played a significant role in opening channels of communication for future engagement, working toward prevention.

Argentina presented IWC/65/WKM&AWI12 which notes the case of a southern right whale interacting with a huge plastic burlap bag in Puerto Madryn that could have been dangerous for the animal and was eventually removed. The case was extensively covered by the national media and helped raise awareness of marine plastic pollution.

The Conservation Committee **endorsed** the recommendations of the Workshop (IWC/65/CCRep04) and in addition **recommended** that the marine debris issue be made a standing agenda item of the Scientific Committee; and that work should be initiated to explore how a CMP might best be developed for marine debris.

10. PROGRESS UNDER THE VOLUNTARY FUND FOR SMALL CETACEAN CONSERVATION RESEARCH

The Vice-Chair of the Scientific Committee, Caterina Fortuna, made a presentation on this subject. Australia initiated the IWC Small Cetacean Conservation Research Fund with a donation of £250,000 in 2009. Subsequently, contributions have been made by France, Germany, Italy, the Netherlands, Switzerland, the UK and the USA. Up to 2013 a total of 15 projects have been approved for full or partial funding, in Bangladesh, Brazil, China, Congo and Gabon, India, Indonesia, Madagascar, Malaysia, Mexico, Solomon Islands, Taiwan, North Pacific and southeast Asia.

The Scientific Committee proposed that the evaluation process be changed so that from 2014 onwards emphasis will be given to projects that show clear potential for effective conservation outcomes in areas of particular need, e.g. where a critical conservation problem is known or suspected, but is not likely to be addressed without support.

The Chair thanked all countries and NGOs that have contributed to the fund. The UK encouraged the provision of further contributions to ensure the work continues.

The UK recognised Mexico's efforts in protecting the critically endangered vaquita in particular through the establishment of the new Advisory Commission of the Presidency of Mexico for the Recovery of the Vaquita (CAP). The UK urged every effort be made in combating the illegal totoaba trade and where possible support be sought within other international agreements such as CITES. Mexico summarised the status of the vaquita in their country, noting it has identified appropriate actions for further protection of the species, which would be implemented in the near future.

The UK also noted the concern raised by the Scientific Committee regarding Maui's dolphins in New Zealand, and welcomed the continued efforts of the New Zealand government to put in place protective measures to reduce the impacts of bycatch. The UK urged all involved to work together to find and implement practical solutions to this urgent problem.

The UK noted its continued opposition to the hunting of small cetaceans and welcomed the renewed efforts within the Scientific Committee to hold an IWC workshop to help define, explore, and assess the use of cetaceans in marine bushmeat. The UK noted that this was an important and emerging issue with clear lessons to be learnt from terrestrial bushmeat initiatives.

Finally, the UK noted the new approach recommended in 2014 by the Scientific Committee to respond to situations where urgent attention is required to protect small cetacean populations. It was considered that this 'task team' approach will allow the Small Cetacean Sub-committee to more swiftly evaluate a situation and provide advice and recommendations intersessionally, which is important not only because of the Commission's biennial meeting cycle, but also the imperilled nature of many populations.

The Chair noted that the suggestion for a 'task team' approach would be brought to the Plenary.

11. NATIONAL REPORTS ON CETACEAN CONSERVATION

Several countries had submitted Voluntary National Cetacean Conservation Reports: Argentina (IWC/65/CC11), Australia (IWC/65/CC04), Chile (IWC/65/CC09), France (IWC/65/CC08), Mexico (IWC/65/CC10), New Zealand (IWC/65/CC06), UK (IWC/65/CC07) and the USA (IWC/65/CC03). The Committee welcomed these reports but did not have time to discuss them in detail.

12. OTHER

Chile proposed that meetings of the Conservation Committee be held annually, noting the reduced time currently available for Committee discussions and the increasing areas of work undertaken. It suggested that in years between IWC Plenary meetings, the Committee could be held back to back with the Scientific Committee. Argentina, Panama, Uruguay, Mexico, Peru and Australia supported this proposal. Australia suggested that this proposal should be addressed by the Finance and Administration Committee so that any financial implications are included in the budget process.

The Conservation Committee **endorsed** the work undertaken by David Mattila on ship strikes and entanglement in fishing gear and marine debris and supported the continuation of this work. Supporting interventions were made by Argentina, Australia, Belgium, the UK and the USA.

13. ADOPTION OF REPORT

The report was adopted on 15 September 2014.

Appendix 1

LIST OF PARTICIPANTS

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Toshihide Kitakado

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Simon Brockington
Greg Donovan
David Mattila
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Harriet Gillett
Andrea Cooke
Sarah Ferriss
Pablo Sinovas

Appendix 2

LIST OF DOCUMENTS

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02	List of documents	
03	United States: Voluntary National Cetacean Conservation Report	11.1
04	Australia: Voluntary National Cetacean Conservation Report	11.1
05	International Whaling Commission (IWC) - the Southern Ocean Whale Sanctuary: proposed way forward for the second decadal review (submitted by Australia)	7.1
06	New Zealand: Voluntary National Cetacean Conservation Report	11.1
07	UK: Voluntary National Cetacean Conservation Report	11.1
08	France: Voluntary National Cetacean Conservation Report	11.1
09	Chile: Voluntary National Cetacean Conservation Report	11.1
10	Mexico: Voluntary National Cetacean Conservation Report	11.1
11	Argentina: Voluntary National Cetacean Conservation Report	11.1
12	Report on the International Workshop on the South Atlantic Whale Sanctuary	7
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01	Report from the Joint IWC-SPAW Workshop to Address Collisions Between Marine Mammals and Ships with a Focus on the Wider Caribbean, Panama, June 2014	4
02	Report of the IWC Whale Watch Operators Workshop	6
03	Report of the Standing Working Group on Conservation Management Plans 2013	
04	Report of the IWC Workshop on Mitigation and Management of the Threats Posed by Marine Debris to Cetaceans	9
05rev1	Report of the Standing Working Group on Conservation Management Plans 2014	8
06	Report of the Standing Working Group on Whale Watching	6.2
07	Ship Strikes Working Group: Seventh progress report to the Conservation Committee	4.2
08	Report of the Scientific Committee Intersessional E-mail Group on Sanctuaries and Sanctuary Proposals	7
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SC/65b/HIM02: Rinaldi, C. and Rinaldi, C. A deadly mother-calf bond in Caribbean sperm whales.		11

Appendix 3

AGENDA

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   - 1.2 Appointment of rapporteurs
   - 1.3 Review of documents
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   - 3.1 Report on progress
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4. Ship strikes
   - 4.1 Report of the Scientific Committee
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5. Southern right whale population of Chile-Peru
   - 5.1 Report of the Scientific Committee on Chile-Peru right whales
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6. Whalewatching
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     - 7.2.1 Introduction of proposal
     - 7.2.2 Report of the Scientific Committee
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8. Conservation Management Plans
   - 8.1 Western Pacific Gray Whale CMP
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     - 8.1.2 Co-ordinator's update
     - 8.1.3 Committee discussions and action arising
   - 8.2 Southwest Atlantic Southern Right Whale CMP
     - 8.2.1 Scientific Committee update
     - 8.2.2 Co-ordinator's update
     - 8.2.3 Committee discussions and action arising
   - 8.3 Southeast Pacific Southern Right Whale CMP
     - 8.3.1 Scientific Committee update
     - 8.3.2 CMP working group update
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   - 8.4 Update on additional CMP proposals
     - 8.4.1 Developing a list of priority species for CMPs – CMP Working Group update

8.4.2 Development of threat-based CMPs – Report of the Scientific Committee
8.4.3 Committee discussions and action arising
8.5 Strategic planning
8.5.1 Regional cetacean conservation measures
8.5.1.1 Working with IGOs, NGOs and others to develop and deliver CMPs
8.5.1.2 CMP strategic plan
8.6 Progress Report by the CMP Standing Working Group
9. Marine debris
9.1 Report from the Scientific Committee
9.2 Report of the 2014 IWC Workshop on Marine Debris
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10. Progress under the Voluntary Fund for Small Cetacean Conservation Research
11. National Reports on Cetacean Conservation
11.1 Introduction of National Reports
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12. Other
13. Adoption of Report

Appendix 4

TERMS OF REFERENCE FOR THE SECOND DECADAL REVIEW OF THE SOUTHERN OCEAN WHALE SANCTUARY

The second decadal review of the Southern Ocean Whale Sanctuary (the Sanctuary) will be undertaken by the Commission's Conservation Committee and Scientific Committee.

A special intersessional meeting will be held to undertake the Sanctuary review.

Taking into consideration the 2001 'Instructions from the Commission to the Scientific Committee for Review of Sanctuaries' (*Ann. Rep. Whaling Comm. 2001*: 65) and Resolution 2002-1 on 'Guidance to the Scientific Committee on the Sanctuary review process' (*Ann. Rep. Whaling Comm. 2001*: 89), and in particular the following principles:

- temporary overlap of management measures, for example Para 10(e) of the Schedule and a Sanctuary, cannot be used to invalidate any long-term scientific and conservation value of a given Sanctuary; and
- the application of the Precautionary Approach shall be determined in accordance to Principle 15 of the 1992 Rio Declaration.

Taking into account the objectives for the Sanctuary given in Appendix 5, the Commission instructs the Conservation Committee and Scientific Committee according to their respective mandates to:

(1) provide advice on the status and trends of whale stocks in the Southern Ocean Whale Sanctuary insofar as these are known. Assess the present and potential threats to whale populations and their habitats in the area of the Sanctuary and the complementary Indian Ocean Sanctuary and how the Sanctuaries address these;
(2) consider whether the Sanctuary is consistent with other measures to protect whales from anthropogenic and other environmental factors;
(3) assess the effects of the Sanctuary and the complementary Indian Ocean Sanctuary in terms of:
   (a) the protection of whales in breeding areas, feeding grounds, and/or migratory routes; and
   (b) international agreements concerning biodiversity and conservation of nature;
(4) evaluate whether the Sanctuary allows for the conduct of scientific research useful for meeting IWC objectives or coordinated integrated research and monitoring programmes across the range of issues of global relevance; and
(5) provide advice on whether the sanctuary is consistent with the precautionary approach.

Appendix 5

SOUTHERN OCEAN WHALE SANCTUARY OBJECTIVES

Taking into account the objectives referred to in the original proposal by France and subsequently agreed by the Commission, the revised objectives can be stated as follows:

(1) contribute to the rehabilitation of a marine ecosystem damaged by the over-exploitation of whales and allow for the restoration of a complex of whale species and populations;
(2) secure a long-term satisfactory habitat for cetaceans and other marine life;
(3) in combination with the Indian Ocean Sanctuary, fully protect at least one population of each of the great whales throughout its migratory range and life-cycle, i.e. on feeding and breeding grounds, to provide for their long-term conservation;
(4) provide a reference area to allow for the collection of information on levels and trends on unexploited and recovering whale populations;
(5) allow for the monitoring of the recovery of ecosystems without their being disturbed by further commercial whaling;
(6) allow for coordinated research on the effects of environmental change on whale stocks;
(7) allow for the Comprehensive Assessment of the effects of setting zero catch limits on whale stocks; and
(8) allow for application of the Revised Management Procedure (RMP) to be phased in over limited geographic ranges and species.

Annex H

Report of the Working Group on Whale Killing Methods and Associated Welfare Issues

Thursday 11 September 2014, Portorož, Slovenia

SUMMARY OF MAIN OUTCOMES

Item and Agenda Item	Main outcomes
Item 3 Data provided on whales killed	The Working Group welcomed the reports from several Governments on their hunting operations or events requiring euthanasia.
Item 4 Information on improving the humaneness of whaling operations	The Working Group welcomed reports from Norway and the USA on their contributions to improvements in whaling operations. NAMMCO provided a summary of its manuals for hunters that focussed on safety for hunters and rapid death for the target species of the hunts.
Item 5 Welfare issues associated with the entanglement of large whales	The Working Group thanked the Secretariat for its report on progress, especially with respect to matters related to entanglements, including training workshops and capacity building, the development of a global database and convening future workshops. It recommended that this work continue, including the post of technical advisor to the Secretariat.
Item 6 Whale welfare	The Working Group endorsed the Report of the Workshop on Euthanasia Protocols. It discussed the work of an intersessional Working Group on Welfare especially in the context of the terms of reference and a revised action plan. Consensus was not reached but discussions will continue informally before consideration at Plenary.

1. INTRODUCTORY ITEMS

The list of participants is given in Appendix 1.

1.1 Appointment of Chair

Michael Stachowitsch (Austria) was appointed as Chair.

1.2 Appointment of Rapporteurs

Greg Donovan, Andrea Cooke, Harriet Gillett, Tim Inskipp and Pablo Sinovas of the Secretariat were appointed as rapporteurs.

1.3 Review of documents

The list of available documents is given in Appendix 3.

2. ADOPTION OF AGENDA

The draft Agenda available prior to the meeting was adopted unchanged. It is given in Appendix 2.

3. DATA PROVIDED ON WHALES KILLED

The Chair introduced Agenda Item 3, noting that this allows Contracting Governments to provide the information specified in Resolutions 1999-1 and 2001-2. Resolution 1999-1 encouraged reporting of data on whales killed including the number killed by each method, the number killed instantaneously, times to death, number of whales targeted and missed, number of whales struck and lost, calibre of rifle where used, number of bullets used and methods to determine unconsciousness/time to death. Resolution 2001-2 encouraged governments to submit information on variance data on times to death (to the extent possible) and comparative data from the killing of other large mammals.

This item also allows reporting of data relevant to administration of euthanasia. The Chair noted that the report of the IWC's recent Workshop on Euthanasia would be discussed under Item 6.1. Data on whales killed and whale killing methods were provided by New Zealand, USA, Denmark (on behalf of Greenland), the Russian Federation, St Vincent and The Grenadines and Norway. The Chair thanked them for presenting the information to the Working Group.

3.1 New Zealand

New Zealand presented IWC/65/WKM&AWI03rev1, which refers to the years 2013-14, and noted also IWC/65/WKM&AWI15. New Zealand's annual reports relate exclusively to the euthanasia of stranded cetaceans beyond all hope of rescue. For the 2013/14 reporting period, the methods used were rifles of various calibre and a 12-bore shotgun. The species involved were long-finned pilot whales (n=47), short-finned pilot whales (3), pygmy sperm whales (2), Gray's beaked whale (1), Cuvier's beaked whale (1), common dolphin (1), bottlenose dolphin (1). All dolphins died immediately except a dolphin for which TTD was 20 seconds and several pilot whales which required multiple gunshots over 2-4 minutes.

New Zealand advised that it took welfare seriously. Stranded cetaceans beyond all hope of rescue are euthanised only by trained personnel of the Department of Conservation. New Zealand noted that even for such personnel it was difficult to place a rifle shot that will result in instant death for a stranded whale at close range, therefore harpoon shots at sea would likely increase difficulty and TTD.

New Zealand further noted that it believes that the full IWC has full competence on cetacean welfare issues and encouraged members to submit full data sets to the Commission to improve animal welfare.

3.2 USA

The USA presented IWC/65/WKM&AWI09, noting that the efficiency of the hunt has improved from an average of 77% over the last 10 years to 81% in 2012 and 80% in 2013. Data

for 46 bowhead whales landed in 2013 were presented. The primary methods used were the penthrite projectile alone or the black powder projectile alone from the darting gun with a black powder projectile from a darting gun also used as a secondary/backup method where necessary (93%). The most common combination was a black powder projectile from a darting gun with the black powder projectile from a shoulder gun (80%). Time to death was estimated to be instant for 15% of the whales. The prevailing environmental conditions of the hunt make estimating time to death using cessation of movement difficult.

3.3 Denmark/Greenland
Greenland presented IWC/65/WKM&AWI06 (with data for 2012) and IWC/65/WKM&AWI07 (with data for 2013). Methods used are penthrite grenades with high calibre rifles as the secondary killing method apart from in the collective rifle hunt for common minke whales (which comprised 35% of the common minke whale catch in 2012 and 54% in 2013). In 2012, the median time to death (TTD) for common minke whales off West Greenland (n=148) was five minutes with about 30% estimated to die instantly; in 2013 (n=175) the corresponding figures were 10 minutes and 24%. In 2012, the median TTD for humpback whales (n=10) was 13 minutes; in 2013 (n=8) it was 15 minutes. In 2012 (n=5) 25% of fin whales were estimated to die instantly; in 2013, the median TTD for fin whales was 10 minutes with 44% estimated to die instantly.

3.4 Norway
Norway presented IWC/65/WKM&AWI11. In addition to information on whales taken in 2012 and 2013 and weapons used (penthrite grenades using 50mm or 60mm harpoon cannons with high calibre rifles and round nosed, full metal jacket bullets as back-up weapons) they reported on obligatory shooting tests for gunners and the inclusion of observers on board and at processing plants in some seasons. Norway noted that research and developments on whale killing methods being undertaken have been continuously reported to the IWC and that from 2008 similar reports have been presented to NAMMCO.

3.5 St Vincent and The Grenadines
IWC/65/WKM&AWI10 was submitted by St Vincent and The Grenadines (who were not present at the meeting).The method used was the harpoon but no humpback whales were taken (two were struck and lost).

3.6 Russian Federation
The Russian Federation presented IWC/65/WKM&AWI04. In addition to information on whales taken in 2013, they noted that there had been no difference in hunting methods (i.e. harpoon with float then darting gun or rifle), but due to climate change hunters have to go further into the open sea. The mean TTD for gray whales (n=127) was reported as 35 minutes while the single bowhead killed took an estimated 45 minutes.

3.7 Working Group discussion and recommendations
There were no discussions or recommendations.

4. INFORMATION ON IMPROVING THE HUMANENESS OF WHALING OPERATIONS

This item allows Contracting Governments to provide information specified in Resolution 1997-1 and supported by Resolution 2001-2. Resolution 1997-1 concerns steps being taken to improve the humaneness of aboriginal whaling operations. Resolution 2001-2 encourages all Contracting Governments to provide appropriate technical assistance to reduce time to unconsciousness and death in all whaling operations.

Two Contracting Governments (Norway and the USA) provided information on this item. A presentation was also given by NAMMCO.

4.1 Norway
Norway presented the relevant section of IWC/65/WKM&AWI11. This details work that Norway has undertaken with NAMMCO members and other countries (Canada, Japan, Russia, USA) to transfer knowledge from Norway to hunters, inspectors and other personnel in order to improve methods and techniques for hunting of whales. In cooperation with NAMMCO and the USA's Alaska Eskimo Whaling Commission (AEWC), Norway has improved manuals for the maintenance and use of whale hunting weaponry.

4.2 USA
The USA presented document IWC/65/WKM&AWI08. They highlight two points from this comprehensive document: the effects of environmental change on the timing and nature of the hunt and the use of penthrite.

With climate change, the USA noted increased offshore oil and gas exploration and increased shipping especially in the Bering Strait. These activities can threaten subsistence hunting and lead to reduced efficiency in subsistence whaling operations. The document summarises some of the work of the AEWC to maintain hunt efficiency in areas subject to these threats and increase human safety.

The USA reported success in the implementation of the penthrite projectile modified for use in the hand-held darting gun. The AEWC is now looking at modifications to darting guns. These modifications are important to ensure high performance for the projectile and safety for hunters. The USA thanked Egil Øen for his contributions in this area.

4.3 Report from NAMMCO
NAMMCO presented the manual for the instruction on the maintenance and use of weaponry and equipment deployed in hunting of baleen whales in NAMMCO member countries. This document is available from *http://www.nammco.no*.

The illustrated manual summarises methods to improve hunters' safety and animal welfare. It covers use and safety information on weapons and equipment and the technical structure of weapons, their function and maintenance. The manual is in English and in the languages of the hunters.

4.4 Working Group discussion and action arising
Australia appreciated the presentation by NAMMCO and efforts by members of the Commission to develop methods for humane killing. However, in its opinion these activities should complement, rather than displace, the role of the IWC with regard to killing methods. Australia reiterated its view that the IWC is the intergovernmental organisation responsible for all aspects of whales and whaling.

5. WELFARE ISSUES ASSOCIATED WITH THE ENTANGLEMENT OF LARGE WHALES

In 2010 and 2011 the IWC held two Workshops which developed a series of recommendations for responding to the welfare concerns caused when whales become entangled in fishing gear and marine debris. At IWC/64 in 2012 the Commission endorsed these recommendations which included promoting the establishment of national entanglement response networks.

A dedicated co-ordinator has been attached to the Secretariat since 2011 to implement these recommendations.

The IWC's separate work programme of the effects of marine debris, including abandoned, lost or otherwise discarded fishing gear, is reported through the work of the Conservation Committee.

5.1 Secretariat report on progress

The Secretariat presented document IWC/65/WKM&AWI14 (overview of the work of the technical adviser assigned to the Secretariat to assist with reducing conflicts between cetaceans and marine resource users: July 2012 to Sept. 2014).

The initiative to address the welfare issues associated with large whale entanglement in manmade material was begun by Australia, Norway and the USA.

Implementing this work through the IWC has been helpful in getting the attention of authorities and it has helped encourage the collection of better data. The work has been particularly successful when undertaken in collaboration with relevant IGOs with a regional presence (e.g. FAO-COFI, CMS, UNEP). Key accomplishments were outlined, including: capacity building workshops at nine locations for over 350 trainees representing at least 18 countries; entanglement apprenticeships; and presentation of the work at a wide range of regional meetings.

Future plans include development of a global database on entanglement, further capacity building and convening an entanglement prevention workshop.

5.2 Discussions and action arising

5.2.1 Work related to entanglement response

Norway, Mexico, the UK, Argentina, the USA, Belgium and Australia thanked the Secretariat, and in particular congratulated David Mattila, for the excellent work in this area. Argentina, Australia and the USA highlighted the need for further entanglement response work to continue. The UK stated its belief that the disentanglement response and training programme is an extremely successful model that the IWC should be minded to replicate to enable a co-ordinated and informed response to other welfare problems, such as mass strandings.

Norway considered that future entanglement workshops should discuss in more detail euthanasia methods to kill moribund, entangled animals as quickly and painlessly as possible in cases where rescue is not possible. Australia said that work on prevention and early intervention should be the highest priorities. The UK highlighted the importance of the establishment of a global database on entanglement which will be discussed during the next meeting of the entanglement response network. In the meantime it encouraged member countries to submit information to the Secretariat (e.g. through the existing National Progress Report system).

The UK and Belgium, considered that the general approach developed for this work could also be applied to other areas such as dealing with mass strandings.

The Working Group **recommended** continuation of the work in light of the recommendations of the previous Workshops, including consideration of prevention measures.

5.2.2 Other matters

Argentina presented IWC/65/WKM&AWI12 which notes the case of a southern right whale interacting with a huge plastic burlap bag in Puerto Madryn that could have been dangerous for the animal and was eventually removed. The case was extensively covered by the national media and helped raise awareness of marine plastic pollution.

Argentina also presented IWC/65/WKM&AWI13 which details four entanglement cases that have taken place 2012-14. In total, 13 entangled southern right whales were sighted in Gulf Nuevo since a stranding network was created in 2009.

The UK and France thanked Argentina for both reports and noted the importance of awareness raising and in particular the positive role that whalewatching operators can play.

6. WHALE WELFARE

6.1 Report of the Workshop on Euthanasia Protocols

Intersessional Working Group on Welfare

The UK and Norway presented IWC/65/WKM&AW1Rep01 (Report of the IWC Workshop on Euthanasia Protocols to Optimise Welfare Concerns for Stranded Cetaceans)[1]. The Workshop, organised jointly by the UK and Norway, brought together international experts to develop guidelines on the best welfare outcomes for stranded cetaceans and to address euthanasia methods, safety of personnel, and decision-making on when to intervene in a stranding. The Workshop compared various euthanasia methods used worldwide and ways of improving efficiency, safety of personnel and when and if to intervene. Objectives included: improving the evidence base on when and how to euthanise stranded cetaceans; improving data on stranding events, and lessons learned from them; improving practical considerations and protocols/guidelines; developing protocols for each euthanasia method; and how to manage events in the context of the media and general public.

The Workshop stressed that human safety was of paramount importance and that euthanasia should only be attempted by trained personnel.

A series of specific and practical recommendations on euthanasia protocols agreed by the Workshop included:

(a) human safety must come first and euthanasia should only be attempted by trained personnel;
(b) humaneness considerations should also be of major importance;
(c) studies are needed on toxicity and persistence of euthanasia chemicals and disposal of contaminated carcasses;
(d) a darting gun to deliver penthrite grenades should be developed for large whale strandings;
(e) the data provided in National Progress Reports should be refined to allow for better evaluation of different euthanasia techniques;
(f) IWC should build on the success of the entanglement response network and provide a similar forum for euthanasia issues;
(g) workshops should be held on euthanasia at sea and for mass strandings; and
(h) member nations should refine or improve new incident response protocols based on principles and guidelines in the Workshop report.

The Workshop recommendations were subsequently endorsed by the Scientific Committee at SC/65b.

6.2 Discussions and action arising

The Chair welcomed the report and thanked the Workshop participants for their thorough and comprehensive review and carefully developed recommendations. Norway thanked the UK for the way it organised the Workshop and hoped that the report would be a constructive tool for those who have to carry out an assignment of animal welfare, which sometimes is risky and dangerous for the operators in addition to often being controversial in the public opinion.

[1]Published in this volume.

6.3 Progress update from the *ad-hoc* intersessional Working Group on Welfare

The UK presented IWC/65/WKM&AWI05 (Discussion paper addressing welfare within the IWC – Intersessional Working Group on Welfare Summary Recommendations). It thanked the members of the intersessional group (Argentina, Luxembourg, New Zealand and the US) for their help in drafting the discussion paper. The group noted that the welfare of cetaceans has become an increasingly important issue globally over the last decade and such considerations are entwined with many of the issues already considered by the IWC, such as whalewatching, ship strikes and entanglement. These discussions currently take place in an *ad-hoc* manner within the IWC so there is a need to bring all aspects of welfare together in one place.

To address this the intersessional Working Group recommended:

- continuing to work on welfare issues intersessionally (see also Appendix 4);
- amending the name and revising the current Terms of Reference of the Whale Killing Methods and Associated Welfare Issues (WKM&AWI) Working Group to reflect a more comprehensive consideration of welfare within the IWC;
- a 'common understanding' of welfare to help promote coordination and understanding within and beyond the IWC;
- a revised Action Plan to better reflect the current scope of the IWC considerations of welfare;
- considering effective ways to deliver this action plan including using seconded experts; and
- a proposal to increase welfare expertise within the IWC.

The UK stressed that the recommendations are not intended to change the group's existing work relating to hunting and welfare, noting the progress made in delivering its 2003 action plan. The purpose of the document is to formally recognise and embed the wider range of welfare considerations already being considered within the IWC into a single place.

6.4 Discussions and action arising

Several delegations thanked the intersessional Working Group for its work. The USA noted that many anthropogenic activities may result in welfare concerns for whales and supported expansion of the group's work to include such welfare concerns. This view was supported by New Zealand, Argentina (who noted that this view was shared by the Buenos Aires group) and Belgium.

Norway gave a brief history of the work of the WKM&AWI Working Group, which began in 1983. It stated that it had implemented many of the proposals in the report and that much of this work is now done through NAMMCO. It acknowledged that it is difficult to develop a universal system to address welfare issues that encompasses the different considerations and ways of life represented at the IWC. The current proposal has good intentions but the scope of them could lead to lengthy discussions. Work on other welfare issues would be better dealt with by separate expert workshops, as in the case of the entanglement issue. Norway would contribute to any such workshops. It recommends that the Working Group continues with its current remit on welfare issues. Iceland associated itself with the statement from Norway.

Denmark acknowledged the importance of welfare work which is especially relevant in Greenland and the Faroe Islands. It shares Norway's concerns about differing values.

The Russian Federation expressed some concerns with the proposed mandate of the revised action plan. In particular, it believed that the issue of hunter welfare should be included. It believes that the current proposal would extend the competence of the Working Group to what it considered to be philosophical issues. With regards to hunter welfare, it described a hunt in Chukotka which uses old hunting methods (mainly spears). This method means a quick death for the whale using low-level technology, but one which is very dangerous for the hunters. The mandate should include discussion of this type of hunt and countries involved in all types of hunting.

Mexico supported the recommendations in the document. The work on entanglement and strandings should be combined under a welfare umbrella. It supported continued use of expert workshops on specific topics. It also noted the co-ordinating role of the Commission, e.g. with respect to various databases and the Global Whale Entanglement Response Network.

Australia supported the recommendations, noting the great progress that has been made despite political differences. Australia noted that just because something might be difficult we should not avoid attempting it and recommended starting implementation of the action plan, since experience within the WKM&AWI Working Group shows that progress is possible.

In responding to these discussions, the UK noted the generally strong support for the recommendations. It emphasised that the objective of the paper was to bring together the wider welfare issues already under discussion within the IWC. The UK noted the intervention made by Norway that the 2003 action plan on welfare was largely complete. The UK recognised that this success was due to a substantial contribution by whaling countries on welfare and invited these countries to provide updates to the proposed Action Plan to reflect this. It acknowledged that the Action Plan was ambitious but believed that there was a need to start work. It also re-emphasised that the issue was not simply philosophical but that there is a recognised scientific discipline regarding animal welfare. It also noted that the new Action Plan does not interfere with previous work on hunter welfare.

South Africa acknowledged Norway's contribution to this issue, and it believed that there was much common ground in the text of the proposed new Action Plan, as well as differences of opinion on some aspects. South Africa suggested that those parties with concerns meet outside of the Working Group to draft changes to the text in order that the proposal could be agreed.

The UK clarified that it was ready to discuss moving forward with any party, with a view to bringing a final revised draft to Plenary for consideration. It stressed that the draft Action Plan contained many recommendations that have already been agreed through earlier Workshops, and it was important that the Commission did not lose momentum on these by deferring the decision on the whole Action Plan to 2016.

Norway said that it did not believe further discussions on changes to text would be productive, as this was an issue of the principles of the IWC and how it works. It reiterated its willingness to continue work in the other areas mentioned by the UK.

The Chair of WKM&AWI requested the UK to consult further with others and to bring the issue forward before Plenary[2].

7. ADOPTION OF THE REPORT

The Chair closed the meeting at 12 noon. The report was adopted by correspondence on 15 September 2014.

[2]Editor's Note: Text as adopted by consensus in Plenary can be found at Appendix 4.

Appendix 1

LIST OF PARTICIPANTS

ARGENTINA
Miguel Iñíguez
Juan Pablo Paniego

AUSTRALIA
Donna Petrachenko
Yvette Blackman
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AUSTRIA
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Harry Brower
DJ Schubert
Greig Arnold

URUGUAY
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NAMMCO
Charlotte Winsnes

CHAIR OF SCIENTIFIC COMMITTEE
Toshihide Kitakado

IWC SECRETARIAT
Simon Brockington
Greg Donovan
Andrea Cooke
David Mattila
Harriet Gillett
Tim Inskipp
Pablo Sinovas
Kate Wilson

Appendix 2

AGENDA

1. Introductory items
   1.1 Appointment of Chair
   1.2 Appointment of rapporteurs
   1.3 Review of documents
2. Adoption of Agenda
3. Data provided on whales killed
   3.1 Contracting Government reports
   3.2 Working Group discussion and recommendations
4. Information on improving the humaneness of whaling operations
   4.1 Reports from Contracting Governments
   4.2 Report from NAMMCO
   4.3 Working Group discussion and action arising
5. Welfare issues associated with the entanglement of large whales
   5.1 Secretariat report on progress
   5.2 Discussions and action arising
6. Whale welfare
   6.1 Report of the Workshop of Euthanasia Protocols (Intersessional Working Group on Welfare)
   6.2 Discussions and action arising
   6.3 Progress update from the *ad-hoc* intersessional Working Group on Welfare
   6.4 Discussions and action arising
7. Adoption of the Report

TERMS OF REFERENCE

The Working Group is established to review information and documentation available with a view to advising the Commission on whale killing methods and associated welfare issues (*Chairman's Report of the 52nd Annual Meeting* held in 2000).

ADMISSION OF OBSERVERS

Rule of Procedure C.2
Observers accredited in accordance with Rule [of procedure] C.1.(a) and (b) are admitted to all meetings of the Commission and Technical Committee, and to any meetings of subsidiary groups of the Commission and Technical Committee, except the Commissioners-only meetings and the meetings of the Finance and Administration Committee.

Appendix 3

LIST OF DOCUMENTS

IWC/65/WKM&AWI		**Agenda Item**
01	Draft Agenda	
02	List of documents	
03rev	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) [2014] (submitted by New Zealand)	3
04	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) (submitted by Russian Federation)	3
05	Addressing welfare within the IWC - Intersessional Working Group on Welfare Summary Recommendations	6.3
06	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) [2012] (submitted by Greenland (Denmark))	3
07	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) [2013] (submitted by Denmark)	3
08	Report on weapons, techniques, and observations in the Alaskan bowhead whale subsistence harvest (submitted by USA)	4
09	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) (submitted by USA)	3
10	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) (submitted by St Vincent and The Grenadines)	3
11	Norwegian Minke Whaling 2012 and 2013 (submitted by Norway)	3 and 4
12	Dangerous situation of a southern right whale playing with a huge plastic burlap bag in Gulf Nuevo in waters off Puerto Madryn	6
13	Update of the report 'Entanglement of Southern Right whales (*Eubalaena australis*) in Golfo Nuevo, Chubut, Argentina'	5
14	Overview of the work of the technical adviser assigned to the Secretariat to assist with reducing conflicts between cetaceans and marine resource users: July 2012 to Sept. 2014	5
15	Summary of Activities Related to the Action Plan on Whale Killing Methods (based on Resolution 1999-1) [2013] (submitted by New Zealand)	3
IWC/65/WKM&AWI Rep		
01	Report of the IWC Workshop on Euthanasia Protocols to Optimize Welfare Concerns for Stranded Cetaceans	

Appendix 4

REVISED NAME, TERMS OF REFERENCE AND ACTION PLAN FOR ADDRESSING WELFARE WITHIN THE IWC - INTERSESSIONAL WORKING GROUP ON WELFARE SUMMARY RECOMMENDATIONS

The revisions in Table 1 are not intended to further burden subsistence hunters with new welfare-related definitions. Rather, they are specifically intended to expand the remit of the IWC's welfare work to include non-hunting contexts that the IWC is already working on.

Name of the Working Group
Working Group on Whale Killing Methods and Welfare Issues (WG-WI).

Terms of reference
The Working Group is tasked with reviewing information and providing advice to the Commission on issues relating to whale killing methods and all aspects associated with ensuring good welfare of cetaceans that are hunted or otherwise impacted by human activities[3].

Revised Action Plan
The revised Action Plan is intended as a living document. It should help organise and articulate priorities, making them clear within the WG-WKM&AWI and across the wider IWC family.

In delivering some aspects of this proposed Action Plan, additional experts may be required or there may be a need to establish specific expert groups. In some cases such expert groups already exist and should be drawn upon, for example, welfare issues related to the direct take of whales have been previously discussed by an expert group that last met in 2006 in St. Kitts[4].

[3]The IWC does not have an agreed definition of welfare. It agreed to work intersessionally to try to develop agreed definitions and guiding principles on animal welfare in order to help promote coordination and understanding within and beyond the IWC. To aid intersessional work on this issue it was noted that a number of expert bodies and intergovernmental organisations have agreed definitions of animal welfare. They commonly consider welfare to be the health of an animal, encompassing both its physical and psychological state. An animal in a good state of welfare (as indicated by scientific evidence) would be free from pain, fear, and distress and be healthy, well nourished, and able to express innate behaviour.
[4]See *Ann. Rep. Int. Whal. Comm.* 2006: 12 (Item 6.1) [2007].

Table 1

Revised Action Plan. **Indicates text based on the 2003 Action Plan.*

Workstream 1 - Embedding welfare considerations within the IWC

Aim: To equip the Commission and its working bodies with the necessary information to ensure cetacean welfare aspects are proactively and consistently considered across all relevant areas of work.

Actions		Outcome	Timelines	Responsible parties
1.1	Examine the potential for a shared understanding of animal welfare in relation to non-hunting human induced threats.	Clarity on the broader goals of the IWC with respect to the promotion of sound animal welfare practices relating to non-hunting aspects of human activities. If possible, identification of shared welfare principles to help provide a collective understanding.	Ongoing	WKM&AWI Working Group
1.2	Establish working links with all relevant Working Groups and Sub-Committees on welfare related aspects.	Formalised information flow from and to those IWC groups already considering welfare aspects and the establishment of new linkages where necessary.	Ongoing	WKM&AWI Working Group; Sub-Committees; Working Groups on whalewatching, ship strikes, entanglement, small cetaceans, etc.

Workstream 2 - Research, management advice and actions to address welfare issues from non-hunting anthropogenic threats

Aim: To improve understanding of the nature and scale of non-hunting welfare threats to cetaceans, and provide both management advice and practical support to mitigate these threats.

Actions		Outcome	Timelines	Responsible parties
2.1 Data gathering and advice				
Objective: To ensure fit for purpose data are collected and made available to the Commission to help improve our understanding of the implications of key threats on the welfare of cetaceans and to support the proposal of appropriate welfare related recommendations.				
2.1.1	Identify and agree upon priority areas of work, where welfare issues are considered most relevant. Agree a detailed Action Plan and update over time as appropriate.	A focussed programme of work and detailed Action Plan which will support delivery and provide a clear steer on priorities to the Commission and the Scientific Committee.	Ongoing	WKM&AWI Working Group
2.1.2	Identify and quantify (where possible) the nature and extent of threats to cetacean welfare, gaps in our understanding, and specific data needs. Where appropriate, propose possible mitigation measures for consideration by the Commission.	A series of topic-specific welfare orientated workshops generating recommendations for the Commission to consider. Covering, for example, extent and severity of threats, research needs, and potential mitigation measures.	Ongoing	WKM&AWI Working Group
2.1.3	Seek to develop criteria to support standardised welfare data collection and encourage the regular sub-mission of relevant data from the sub-groups to the WKM&AWI Working Group.	Fit for purpose, standardised data which are more easily compared and analysed across the range of welfare issues being addressed by the WKM&AWI Working Group.	-	WKM&AWI Working Group; Sub-Committees; Working Groups on whale watching, ship strikes, entanglement, small cetaceans, etc.
2.2 Euthanasia				
Objective: To produce specific recommendations to the Commission in relation to the euthanasia of cetaceans.				
2.2.1	Review the information, and progress the recommendations, arising from the 2013 Workshop on Euthanasia Protocols to Optimize Welfare Concerns for Stranded Cetaceans.	Agreed suite of humane practices and protocols (including health and safety) applicable to stranded cetaceans and associated recommendations to be considered and adopted by IWC parties.	2016 (IWC/66)	WKM&AWI Working Group
2.2.2	*Organise additional topic-specific workshops to address gaps in understanding and progress key aspects relating to euthanasia (*Action 5, 6, and 10 - 2003 Action Plan)*.	The bringing together of experts to: agree recommendations on euthanasia protocols for mass stranding events; the development of criteria for determining permanent insensibility, unconsciousness and death; and work towards developing reliable indices of stress (last two relevant to both whaling and non-whaling welfare considerations).	Ongoing	WKM&AWI Working Group
2.3 Disentanglement				
Objective: To produce specific recommendations to the Commission in relation to the welfare implications of entanglement, in particular relating to marine debris and active fishing gear.				
2.3.1	Support the continued growth and development of the disentanglement network and ensure that the IWC becomes the central point for capturing and disseminating relevant information and raising standards.	A sustained increase in the number of people trained to safely disentangle cetaceans. A global, publically accessible database on cetacean entanglements, disentanglement efforts and outcomes. Training workshops held in entanglement hotspots.	Ongoing	Disentanglement network (led by David Mattila)
2.3.2	Take steps to apply the successful model of the disentanglement network to other areas, in particular in improving and standardising responses to euthanasia and strandings events (linked with sub-workstreams (i) and (iii)).	Improved and standardised responses to issues such as strandings and euthanasia. Establishment of a global strandings/euthanasia expert network, training package and stranding database. Management advice adopted by the IWC and translated into practical content.	2016 (IWC/66)	WKM&AWI Working Group
2.4 Cetacean strandings				
Objective: To work through existing strandings networks to produce specific recommendations to the Commission in relation to the welfare implications of responding to cetacean stranding events.				
2.4.1	Organise a mass strandings workshop to progress the development of shared best practice and guidance in responding to such events (linked with Action 7).	The bringing together of experts and existing strandings networks to share experiences, agree guidance, and help raise welfare standards when dealing with mass stranding events. The IWC established as a central repository for shared guidance and best practice.	2016 (IWC/66)	WKM&AWI Working Group

Workstream 3 – Management advice and actions to address welfare issues in relation to hunting

Aim: To deliver practical improvements in welfare aspects associated with cetacean hunts, including Aboriginal Subsistence Whaling (ASW).

Actions		Outcomes	Timelines	Responsible parties
3.1	*Encourage increased collection and submission of fit for purpose, standardised time to death data from member states in relation to primary and secondary killing methods in commercial and ASW hunts. (*Action 7 - 2003 Action Plan*).	Fit for purpose and consistent data from across different hunts will allow for an evidenced comparison of the effectiveness of different killing methods. Data presented with appropriate statistical analysis will allow for comprehensive independent appraisal.	Ongoing	IWC Contracting Parties
3.2	*Encourage the collection and presentation of fit for purpose, standardised struck and lost rates in all commercial and ASW hunts, including information on weaponry and techniques used. (*Action 8 and 9 - 2003 Action Plan*).	Data will allow for evidenced considerations of the effectiveness of different weaponry and techniques.	Ongoing	IWC Contracting Parties
3.3	Encourage continued co-operation amongst Contracting Governments to review and improve weaponry and methods used for hunting whales. This may include but is not limited to: (a) *refining the design of penthrite grenades to take into consideration necessary species-specific modifications of charge and depth or timing after impact at which detonation is triggered (*Action 1 and 9 - 2003 Action Plan*); (b) encouragement and support for the replacement of cold harpoons and other weaponry of lower efficiency with penthrite grenades in ASW hunts; (c) *refining the design of sighting equipment suitable for rapid action under conditions at sea, in order to improve accuracy of delivery of penthrite grenades (*Action 2 and 9 - 2003 Action Plan*); (d) *supporting and encouraging the development and implementation of training programmes on safe handling and effective use of weaponry including the penthrite grenade and other aspects of hunts (*Action 2 and 9 - 2003 Action Plan*); (e) *seeking updated information and review of constraints on shooting distance and relative orientation of vessel and whale in order to promote measures to reduce times to death (*Action 3 - 2003 Action Plan*); (f) *reviewing the use and effectiveness of secondary killing methods on different species including analysis of all currently used methods and promotion of most effective methods for reducing time to death of whales (*Action 4 - 2003 Action Plan*); and (g) collection of information on age and wear of the weaponry currently being used, and the impact of such on welfare aspects of hunts. Encouragement of the development of mechanisms to address concerns such as regular inspections of whaling gear.	The implementation of practical improvements to existing practices which will improve the welfare aspects associated with the hunting of whales, including time to death and struck and lost rates.	Ongoing	IWC Contracting Parties

Workstream 4 - Communications and outreach

Aim: To engage external experts in, and promote more widely, the IWC's welfare agenda.

Actions		Outcome	Timelines	Responsible parties
4.1	Establish and maintain appropriate and constructive links with organisations considering animal welfare, including the hunting of terrestrial animals.	Secures input of additional and valuable expertise into IWC discussions. Ensures cross-fertilisation between organisations dealing with cross-cutting issues such as the American Veterinary Medical Association (AVMA), the North Atlantic Marine Mammal Commission (NAMMCO) and the World Organisation for Animal Health and Welfare (OIE).	Ongoing	WKM&AWI Working Group; Secretariat
4.2	Request that Contracting Governments provide information on animal welfare science experts for inclusion in the IWC external contacts database.	A fully populated database of external national contacts which can be drawn upon to help progress relevant work being undertaken by the Commission.	2016 (IWC/66)	WKM&AWI Working Group; Secretariat; IWC Contracting Parties

Annex I

Report of the Infractions Sub-Committee

Thursday 11 September 2014, Portorož, Slovenia

MAIN OUTCOMES, DECISIONS AND REQUIRED ACTIONS ARISING

Issue and Agenda Item	Main outcomes
Item 3 Infractions Reports for 2012 and 2013	• A summary of infraction reports received by the Commission for 2012 and 2013 was reviewed and is given in Appendix 3. • Some members considered that, as there is no agreed quota for aboriginal catches in Greenland for the 2013-18 period, the catches taken in Greenland in 2013 should be reported as infractions. Denmark (Greenland) did not agree with this view. The issue was referred to the Commission. • There was some discussion regarding lactating whales not accompanied by calves and short whales only just below the size limit that were reported as infractions but which are very difficult to identify at sea before the whale is caught. It was suggested that such cases should not be considered as infractions. • Referring to the recent judgement of the International Court of Justice (ICJ), clarification was sought on how the IWC databases will describe catches taken under the Japanese JARPA II programme. At present, these catches are shown as taken under special permit with a footnote indicating they have been discussed by the ICJ and including a reference to the court judgement. • Japan emphasised that it accepts the ICJ judgement, and is committed to follow it. It stated that the ICJ judgement was not retrospective to past JARPA II activities and therefore past JARPA II catches are not violations. Some members regarded catches under JARPA II as infractions.
Item 3.2 Follow-up on earlier reports	Information on the completion of the one previously unresolved infraction from earlier seasons is given in Appendix 3, Table 3.
Items 5-7 Other information	• Information on the surveillance of whaling operations in the 2012 and 2013 is summarised under Item 5. • The information provided that is required or requested under Section VI of the Schedule is summarised under Item 6. • A summary of national legislation supplied to the Commission is given in Table 1. Chile and Denmark (Greenland) have submitted legislation since the IWC/64 meeting.

1. INTRODUCTORY ITEMS

A list of participants is given in Appendix 1.

1.1 Appointment of Chair

Lars Walløe (Norway) was elected Chair. He noted that this was his third term as Chair of the Infractions Sub-Committee, and as this is the traditional term of service, the Sub-Committee may wish to elect a new Chair for the next meeting.

1.2 Appointment of rapporteur

Cherry Allison (Secretariat) was appointed rapporteur with assistance from Sarah Ferriss.

1.3 Review of documents

The following documents were available to the Sub-Committee:

IWC/65/Inf

01. Revised Draft Agenda
02. Annotated Draft Agenda
03. National Legislation Details Supplied to the IWC
04. Draft Summary of Infraction Reports Received by the Commission for 2012 and 2013

2. ADOPTION OF THE AGENDA

The draft Agenda was adopted unchanged (see Appendix 2).

3. INFRACTIONS REPORTS FROM CONTRACTING GOVERNMENTS

3.1 Reports for 2012 and 2013

The Sub-Committee reviewed IWC/65/Inf04, the draft summary of infraction reports received by the Commission for 2012 and 2013, which is given as Appendix 3 to this report.

Argentina noted that the IWC recognises aboriginal subsistence catches but that a quota for aboriginal subsistence catches in Greenland for the period 2013 to 2018 was not agreed at IWC/64. Therefore it considered that the catches in east and west Greenland, as listed in Table 1b of Appendix 3, took place without the authorisation of the IWC and should be reported as infractions according to Article IX of the Convention. Chile, Mexico and Australia supported Argentina's comments.

Denmark re-affirmed its commitment to the IWC as an instrument for the regulation of whaling, and to the Infractions Sub-Committee. Denmark (Greenland) has, as always, submitted the relevant data from Greenland in fulfilment of its reporting obligations. It stated that portraying its aboriginal take as an infraction does not reflect the

exceptional circumstances faced by Denmark (Greenland) and the IWC following the last meeting. It also fails to note that all Greenlandic catches are strictly regulated and follow the advice of the Scientific Committee. Furthermore it does not address the comprehensive efforts made by Denmark (Greenland) to resolve the issue to be able to continue its work within the IWC nor does it recognise the subsistence needs of the indigenous people of Greenland. Denmark is, together with others, working hard to find a carefully balanced solution which addresses concerns on all sides for the future and is grateful to all those who have participated in the process.

The Chair confirmed that this issue would be brought to the attention of the Commission.

Regarding the list of 2013 infractions, the Russian Federation drew attention to catches of calves by the USA that were independent from their mothers (2013.5 and 2013.6, Appendix 3, Table 2b) and of a lactating female by Iceland (2013.7). It questioned whether it was possible to identify calves and lactating whales at sea and asked whether these catches should be considered as infractions.

The USA stated that it is very difficult to distinguish between an adult and an older calf at sea and occasionally a calf may be taken inadvertently. Since 2006, a bowhead calf has been defined as having a body length of 7.5m or less and a baleen length of less than 60cm. At the time, the Scientific Committee Chair indicated that the criteria were not practical for assessing calves at sea. In both the instances reported in 2013, the Alaska Eskimo Whaling Commission (AEWC) determined the taking of the calf was an unforeseeable mistake; therefore, no sanctions were imposed on the hunters.

Iceland recalled that this matter was discussed at the last meeting[1] when the Secretariat clarified that the Convention prohibits the taking of females with calves and hence that while catches of lactating females are traditionally reported to this Sub-Committee they are not infractions *per se*. In the case reported in IWC/65/Inf04, it was impossible to identify that the animal was lactating, until after it had been caught. Such cases are unavoidable and hence no penalty was issued.

Referring to the recent judgement of the International Court of Justice (ICJ), Australia asked for clarification on how the IWC databases will describe catches taken under the Japanese JARPA II programme. Japan emphasised that it recognises and accepts the ICJ judgement, and is committed to follow it. It noted that the court 'Decides that Japan shall revoke any extant authorisation, permit or licence granted in relation to JARPA II, and refrain from granting any further permits in pursuance of that programme.' Japan explained that the last sampled animal was in early March 2014, prior to the ICJ judgement, and that all JARPA II special permits expired by 31 March 2014. It stated that the ICJ judgment was not retrospective to past JARPA II activities and therefore past JARPA II catches are not violations. While data should be considered by the IWC Scientific Committee, Japan stated that any country can choose not to use JARPA II data in their analyses and papers.

Japan further suggested that the ICJ judgement is legally binding to the countries involved (Japan, Australia, New Zealand) but that the IWC is not bound to the ICJ judgement, unless the IWC makes a decision relating to it. Japan also noted that the IWC does not have competence to make a judgement on the interpretation of the ICJ judgement. Following an observation by Argentina that Article 65 of the UN Convention on the Law of Sea (UNCLOS) allows for countries to work through the appropriate international organisations for the conservation, management and research of cetaceans, Japan clarified that it does not deny competence of the IWC under Article 65 of UNCLOS.

Chile, supported by Argentina, regarded catches under JARPA II as infractions on the basis that they are non-scientific catches made by an IWC member.

The Secretariat clarified that at present, the JARPA II catches are shown in the IWC database as taken under special permit with a footnote indicating they have been discussed by the ICJ and including a reference to the court judgement.

3.2 Follow-up on earlier reports

Information on the completion of previously unresolved infractions from earlier seasons is given in Appendix 3, Table 3; these include one infraction by Korea.

4. SURVEILLANCE OF WHALING OPERATIONS

The Infractions Report submitted by the USA, the Russian Federation and St Vincent and The Grenadines stated that 100% of their catches are under direct national inspection. Catches by Denmark (Greenland) are subject to a random check (1%). In 2012, 17.3% of the catch by Iceland was under direct national inspection; in 2013, 5.3% was under direct national inspection and 4.7% was under inspection under an international programme.

5. CHECKLIST OF INFORMATION REQUIRED OR REQUESTED UNDER SECTION VI OF THE SCHEDULE

The Checklist was developed as an administrative aid to the Sub-Committee in helping it to determine whether obligations under Section VI of the Schedule were being met. It is not compulsory for Contracting Governments to fill in the Checklist although they do have to fulfil their obligations under this Section of the Schedule.

The available information is summarised below.

Denmark: Information on date, species, length, sex, whether the whale is lactating and the length and sex of any foetus if present is collected for between 73-100% of the catch, depending on the item. The position of each whale killed is collected for 58-68% of the catch and the name of the area where whales are hunted is reported for the remainder. Information on killing methods and numbers of struck and lost animals are also collected.

USA: Information on date, time, species, position, length, sex, the length and sex of any foetus if present, killing method and number of struck and lost is collected for 67-100% of the catch. Biological samples are collected from at least 53% of animals.

Russian Federation: Information on date, time, species, position, length, sex, whether the whale is lactating, killing method and numbers struck and lost is collected for 100% of the catch. Biological samples are collected from about 45% of animals.

St Vincent and The Grenadines: Information on date, time, species, position, length, sex, the length and sex of any foetus if present, whether the whale is lactating, killing method and numbers struck and lost is collected for 100% of the catch. Biological samples are collected.

Norway and Iceland: the required information has been submitted to the Secretariat as noted in the Scientific Committee report (IWC/65/Rep01 (2013) and (2014)).

[1] *Ann. Rep. Int. Whal. Comm.* 2012: 114-120.

Table 1
National Legislation details supplied to the IWC[1, 2].

Country	Date of most recent material	Country	Date of most recent material
Antigua and Barbuda	None	Kiribati	None
Argentina	2003	Korea, Republic of	2011
Australia	2000	Laos	None
Austria	1998	Lithuania	None
Belgium	2002	Luxembourg	None
Belize	None	Mali	None
Benin	None	Marshall Islands, Republic of	None
Brazil	2008	Mauritania	None
Bulgaria	None	Mexico	2006
Cambodia	None	Monaco	None
Cameroon	None	Mongolia	None
Chile	2011	Morocco	None
China, People's Republic of	1983	Nauru	None
Colombia	None	Netherlands, The	2002
Congo, Republic of	None	New Zealand	1992
Costa Rica	None	Nicaragua	None
Cote D'Ivoire	None	Norway	2000
Croatia, Republic of	None	Oman	1981
Cyprus	None	Palau, Republic of	None
Czech Republic	None	Panama	None
Denmark (including Greenland)	2013	Peru	1984
Dominica	None	Poland	None
Dominican Republic	None	Portugal	2004
Ecuador	2000	Romania	None
Eritrea	None	Russian Federation	1998
Estonia	2008	San Marino	None
Finland	1983	Saint Kitts and Nevis	None
France	1994	Saint Lucia	1984
Gabon	None	Saint Vincent and The Grenadines	2003
Gambia	None	Senegal	None
Germany	1982	Slovak Republic	None
Ghana, Republic of	None	Slovenia	None
Grenada	None	Solomon Islands	None
Guatemala	None	South Africa	1998
Guinea-Bissau	None	Spain	2008
Guinea, Republic of	None	Suriname	None
Hungary	None	Sweden	2004
Iceland	1985	Switzerland	1986
India	1981	Tanzania	None
Ireland	2000	Togo	None
Israel	None	Tuvalu	None
Italy	None	UK	1996
Japan	2008	Uruguay	2002
Kenya	None	USA	2004

[1]Up to the 10th of September 2014. Dates in the table refer to the date of the material not the date of submission.
[2]Member states of the European Union (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and UK) are subject also to relevant regulations established by the Commission of the European Union. The date of the most recent EU legislation supplied to the International Whaling Commission is 2005.

6. SUBMISSION OF NATIONAL LAWS AND REGULATIONS

A summary of national legislation supplied to the Commission is given in Table 1. Chile and Denmark (Greenland) have submitted legislation since the IWC/64 meeting.

7. OTHER MATTERS

7.1 Reports from Contracting Governments on availability, sources and trade in whale products

The Commission has adopted a number of Resolutions inviting Contracting Governments to report on the availability, sources and trade in whale products:

- 1994-7 on international trade in whale meat and products;
- 1995-7 on improving mechanisms to prevent illegal trade in whale meat;
- 1996-3 on improving mechanisms to restrict trade and prevent illegal trade in whale meat;
- 1997-2 on improved monitoring of whale product stockpiles; and
- 1998-8 *inter alia* reaffirmed the need for Contracting Governments to observe fully the above Resolutions addressing trade questions, in particular with regard to the problem of illegal trade in whale products, and urged all governments to provide the information specified in previous Resolutions.

No reports were received by the Secretariat on these resolutions and no comments were made during the meeting.

7.2 Other

No other matters were raised.

8. ADOPTION OF REPORT

The report was adopted by correspondence on 13 September 2014.

Appendix 1

LIST OF PARTICIPANTS

ARGENTINA
Juan Pablo Paniego
Miguel Iñíguez

AUSTRALIA
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Rodrigo Garcia

CHAIR OF SCIENTIFIC COMMITTEE
Toshihide Kitakado

IWC SECRETARIAT
Simon Brockington
Cherry Allison
Greg Donovan
Sarah Ferriss

Appendix 2

AGENDA

1. Introductory items
   1.1 Appointment of Chair
   1.2 Appointment of rapporteur
   1.3 Review of documents
2. Adoption of the Agenda
3. Infractions reports from Contracting Governments
   3.1 Reports for 2012 and 2013
   3.2 Follow-up on earlier reports
4. Surveillance of whaling operations
5. Checklist of information required or requested under section VI of the Schedule
6. Submission of national laws and regulations
7. Other matters
   7.1 Reports from Contracting Governments on availability, sources and trade in whale products
   7.2 Other
8. Adoption of the Report

TERMS OF REFERENCE

The Infractions Sub-Committee considers matters and documents relating to the International Observer Scheme and Infractions insofar as they involve monitoring of compliance with the Schedule and penalties for infractions thereof (*Rep. int. Whal. Commn* 29: 22).

Appendix 3

SUMMARY OF INFRACTIONS REPORTS RECEIVED BY THE COMMISSION FOR 2012 AND 2013

Under the terms of the Convention, each Contracting Government is required to transmit to the Commission full details of each infraction of the provisions of the Convention committed by persons and vessels under the jurisdiction of the Government. Note that although lost whales are traditionally reported, they are not intrinsically infractions.

Aboriginal subsistence catches and infractions are summarised in Tables 1a-b. Catch and associated data for commercial and scientific permit catches were submitted to the IWC Secretariat (IWC/65/Rep01 (2013) and (2014)). The data for commercial catches and other infractions are summarised in Tables 1c-d.

Table 2 gives details of the infractions reported in the 2012 and 2013 seasons and Table 3 gives information on the unresolved infractions from previous years.

Table 1a

Summary of Aboriginal subsistence catches and infractions reported for the 2012 season.

Country	Species	Males	Females	Total landed	Struck and lost	Total strikes	Infractions/comments
Denmark							
West Greenland	Fin whale	0	4	4	1	5	None
	Minke whale	33	109	144[1]	4	148	None
	Humpback whale	2	4	7[2]	3	10	2 (Infractions 2012.1, 2)
East Greenland	Minke whale	0	4	4	0	4	None
St Vincent and The Grenadines							
	Humpback whale	0	1	1	1	2	None
USA							
	Bowhead whale	24	29	55[1]	14	69	None
Russian Federation							
	Gray whale	50	89	139	4	143[3]	None

Table 1b

Summary of Aboriginal subsistence catches and infractions reported for the 2013 season.

Country	Species	Males	Females	Total landed	Struck and lost	Total strikes	Infractions/comments
Denmark							
West	Fin whale	3	5	9[2]	0	9	2 (Infractions 2013.1,3)
Greenland	Minke whale	37	127	166[1]	9	175	1 (Infraction 2013.4)
	Humpback whale	4	3	7	1	8	1 (Infraction 2013.2)
East Greenland	Minke whale	1	3	4	2	6	None
St Vincent and The Grenadines							
	Humpback whale	3	1	4	0	4	None
USA							
	Bowhead whale	21	25	46	11	57	2 (Infractions 2013.5,6)
Russian Federation							
	Gray whale	39	86	125	2	127[4]	None
	Bowhead whale	1	0	1	0	1	None

[1]Includes 2 whales of unknown sex. [2]Includes 1 whale of unknown sex. [3]Includes 8 whales that were inedible due to strong chemical smell. [4]Includes 2 whales that were inedible due to strong chemical smell.

Table 1c

Summary of Commercial catches and other infractions reported for the 2012 season.

Nation	Species	Males	Females	Total landed	Lost	Total	Infractions/comments
Iceland							
	Minke whale	38	11	49	3	52	None
Norway							
	Minke whale	144	313	458[5]	6	464	None
Republic of Korea							
	Minke whale	-	-	-	-	4	4 (Infractions 2012.3-6)

Table 1d

Summary of Commercial catches and other infractions reported for the 2013 season.

Nation	Species	Males	Females	Total landed	Lost	Total	Infractions/comments
Iceland							
	Minke whale	13	22	35	0	35	None
	Fin whale	58	71[6]	129	5	134[6]	1 (Infraction 2013.7)
Norway							
	Minke whale	194	394	588	6	594	None
Republic of Korea							
	Minke whale	-	-	-	-	12	12 (Infractions 2013.8-19)

[5]Includes 1 animal of unknown sex. [6]Includes one whale (a female) listed as fin which was genetically determined to be a fin/blue whale hybrid.

Table 2a

List of infractions from the 2012 season.

Ref.	Nation	Species	Sex	Length	Date	Infraction (specify)	Explanation	Penalty/action	Investigation complete?
2012.1	Greenland /Denmark	Hump-back	F	14m	07/11/12	Killing method	Ilulissat (West Greenland). Report from regional Wildlife Officer on killing method (cold harpoon) used for secondary killing	Reported to the Police.	Investigation ongoing
2012.2	Greenland /Denmark	Hump-back	Unk.	Unk.	06/11/12	Killing method	Sisimiut (West Greenland). Report from regional Wildlife Officer on killing method (whale grenade-99 for minke whale) used for primary and secondary killing. Whale was lost.	An administrative warning was given.	Yes
2012.3	Korea	Minke (1)	Unk.	5m	23/05/12	No quota (illegal catch)	In the morning of 23 May, 2012, a minke whale was illegally caught with a harpoon in waters ~20 miles east of Guryongpo, Ulsan. The whale was killed by blood loss.	Total: Nine violators. 4 violators: 8 months imprisonment and 2 years probation. 3 violators: 6 months imprisonment and 2 years probation. 1 violator: monetary penalty (US$4,000). 1 violator: monetary penalty (US$3,000).	Yes
2012.4	Korea	Minke (1)	Unk.	6m	June 2012	No quota (illegal catch)	The violators found a minke whale in the East Sea off Gyeongsangbuk-do on an unknown date in June 2012 and were alleged to have caught the whale illegally in a way not permitted under the Fisheries Act (probably harpoon). The whale was dismembered and hidden at sea.	Suspension of prosecution. Dismembered whale meat: confiscated.	Yes
2012.5	Korea	Minke (1)	Unk.	5m	02/09/12	No quota (illegal catch)	Around 10:15pm 2 Sep. 2012, 3 people including the captain of *No. 105 Donggun* (5.84 ton) were arrested while trying to transport 118 bags of illegally caught whale meat (stored in its fish well) from the pier within Guryongpo Port in Guryongpo-eup, Nam-gu, Pohang-si to a porter truck parked at the port.	Total: three violators. 1 violator: 8 months imprisonment and 2 years probation. 1 violator: 6 months imprisonment and 2 years probation. 1 violator: monetary penalty (US$4,000). Dismembered whale meat: confiscated.	Yes
2012.6	Korea	Minke (1)	Unk.	6m	29/12/12	No quota (illegal catch)	2 violators went aboard *Chungwoon* at 10:00am on 29 Dec. 2012 and received 30 bags of minke whale meat to store in its fish well. The meat is suspected to originate from a minke whale that was illegally caught and dismembered by an unknown vessel in the East Sea. *Chungwoon* transported the whale meat to waters ~10 miles east of Cape Homi, Homigot-myeon, Nam-gu, Pohang-si at 7:30pm on the same day.	Total: two violators. 1 violator: 6 months imprisonment and 2 years probation. 1 violator: monetary penalty (US$4,000). Dismembered whale meat: confiscated.	Yes

Table 2b

List of infractions from the 2013 season.

Ref.	Nation	Species	Sex	Length	Date	Infraction (specify)	Explanation	Penalty/action	Investigation complete?
2013.1	Greenland /Denmark	Fin whale	M	18m	14/03/13	Killing method*	Maniitsoq (West Greenland). Report from regional Wildlife Officer on killing method (whale grenade-99 for minke whale) used for secondary killing.	Reported to the Police, investigation ongoing.	No
2013.2	Greenland /Denmark	Humpback whale	M	-	25/05/13	Killing method*	Nuuk (West Greenland). Report from regional Wildlife Officer on killing method (whale grenade-99 for minke whale) used for secondary killing.	Reported to the Police, investigation ongoing.	No
2013.3	Greenland /Denmark	Fin whale	F	18m	05/08/13	Killing method*	Paamiut (West Greenland). Report from regional Wildlife Officer on hunt without license and on killing method (whale grenade-99 for minke whale) used for secondary killing.	Reported to the Police, investigation ongoing.	No
2013.4	Greenland /Denmark	Minke whale	F	4,7m	27/09/13	Killing method*	Kangaamiut (West Greenland). Report from regional Wildlife Officer on killing method (cold harpoon) used for secondary killing and sale without prior stamping of sale license.	Reported to the Police, investigation ongoing.	No
2013.5	USA	*Balaena mysticeus*	F	6.78m	22/09/13	Calf	A whale swimming independently was taken in Barrow, and upon landing was determined to be a calf, based on body and baleen length and stomach contents.	N/A	Yes
2013.6	USA	*Balaena mysticeus*	F	7.01m	25/09/13	Calf	A whale swimming independently was taken in Barrow, and upon landing was determined to be a calf, based on body and baleen length and stomach contents.	N/A	Yes
2013.7	Iceland	Fin	F	68 feet English	17/09/13	Lactating	Whale caught at 66°2'N, 26°27'W. No calf was seen.	None	Yes
2013.8	Korea	Minke (1)	Unk.	5m	20/01/13	No quota (illegal catch)	The violators were on board a rubber boat with an unknown person in waters 1 mile east of Gugye port, Yeongduk-gun, Gyeongsangbuk-do at 09:46pm 20 Jan 2013, and were alleged to tranship 89 bags of minke whale and 11 pieces of whale meat from *Taekyung* (6.07 ton, a gillnet) and then transport them to the port of Gugye.	Total: two violators. 1 violator: 6 months imprisonment and 2 years probation. 1 violator: monetary penalty (US$5,000). Dismembered whale meat: confiscated.	Yes
2013.9	Korea	Minke (1)	Unk.	Unk.	Feb. 2013	No quota (illegal catch)	A bottom trawler embarked from Gampo port on 20 Feb 2013. When trawling began at 05:00am at the point of Fix 35-41°N 129-40°E (in waters ~10 miles east of Wolseong Nuclear Power Plant), the vessel hauled its fishing net at 07:50am and obtained a minke whale carcass with its head and flesh removed. The vessel called at the port of Gampo and reported the fact later that day.	Suspension prosecution. The carcass and some remaining meat was confiscated.	Yes
2013.10	Korea	Minke (1)	Unk.	5m	01/06/13	No quota (illegal catch)	On 1 June 2013, the violators fired a wired-harpoon into a minke whale swimming in waters 13 miles east of Wolpo, Cheonghamyeon, Buk-gu, Pohang-si. After following the whale until it died, they lifted the carcass and dismembered it.	Total: five violators. 3 violators: 8 months imprisonment and 2 years probation. 2 violators: 6 months imprisonment and 2 years probation. Dismembered whale meat: confiscated.	Yes
2013.11	Korea	Minke (1)	Unk.	Unk.	21/07/13	No quota (illegal catch)	On 21 July 2013, the violator received ~30 bags of illegally caught and dismembered whale meat from an unknown vessel at 5-6:00pm near a breakwater at the Daebo 1-ri port, Daebo-ri, Homigot-myeon, Nam-gu, Pohang-si and transported them to Guryongpo, Namgu, Pohang-si by truck.	Total: one violator. 1 violator: 8 months imprisonment and 2 years probation. Dismembered whale meat: confiscated.	Yes
2013.12	Korea	Minke (1)	Unk.	5.5m	27/08/13	No quota (illegal catch)	The violators harpooned a minke whale at around 11:30am in waters ~13 miles northeast of Daebo port, Daebo-ri, Homigot-myeon, Nam-gu, Pohang-si. The whale was dismembered and the meat put into bags and hidden in the sea with buoys attached.	Total: nine violators. 3 violators: 8 months imprisonment and 2 years probation. 2 violators: 6 months imprisonment and 2 years probation. 2 violators: monetary penalty (US$ 7,000). 2 violators: monetary penalty (US$ 4,000). Dismembered whale meat: confiscated.	Yes

Cont.

Ref.	Nation	Species	Sex	Length	Date	Infraction (specify)	Explanation	Penalty/action	Investigation complete?
2013.13-15	Korea	Minke (3)	Unk.	Unk.	05/08/13	No quota (illegal catch)	At about 4:00pm on 5 Aug. 2013 the violator lifted 124 bags of dismembered minke whale meat (suspected to be 3 minke whales) which had been hidden at sea ~14 miles east of Chilpo Quay, Chilpo-ri Heunghae-eup, Pohang-si. At 5:00pm the same day, a vessel called at the quay carrying the bags and the violator was arrested.	Total: one violator. 1 violator: 6 months imprisonment and 2 years probation. Dismembered whale meat: confiscated	Yes
2013.16	Korea	Minke (1)	Unk.	5m	22/08/13	No quota (illegal catch)	At 3:00pm on 22 Aug. 2013 the violators harpooned a minke whale swimming in waters ~15 miles east of Chuuksan-myeon, Yeongduk-gun and dismembered it. Later the same day, they transhipped the carcass to another man in a rubber boat in waters ~8 miles north of Daebo-ri.	Total: 2 violators. 1 violator: monetary penalty (US$ 8,000) 1 violator: monetary penalty (US$ 3,000). Dismembered whale meat: confiscated.	Yes
2013.17-18	Korea	Minke (2)	Unk.	Unk.	10/09/13	No quota (illegal catch)	At 10:40am on 10 September 2013, the violators lifted and stored 74 bags of minke whale which had been illegally caught and dismembered by an unknown vessel in the East Sea. The vessel had put the carcass into net bags and sacks and hidden them in the sea with buoys attached.	Total: 2 violators. 1 violator: 8 months imprisonment and 2 years probation. 1 violator: 6 months imprisonment and 2 years probation. Dismembered whale meat: confiscated.	Yes
2013.19	Korea	Minke (1)	Unk.	Unk.	22/08/13	No quota (illegal catch)	At 5:20am on 22 August 2013, a dead minke whale was discovered floating in waters ~5 miles southeast of Galnam port Wondeok-eup, Samcheok-si, Gangwon-do. The carcass was tied to a vessel which called at the port of Jangho at around 6:30 on the same day and reported it to the police. Inspection found signs of whale hunting on the head of the carcass.	No sign of infraction was found from the reporter. Difficult to specify vessel suspected of hunting the whale (internal investigation completed).	Yes

NOTE: The USA also reported that a small whale (8.33m) was taken in Nuiqsut on 13 Sept 2013 and originally reported as a calf. Based on the original report, the AEWC Board of Commissioners imposed a fine of $2,500 on the captain. Hunting rights for the captain and crew were suspended for two seasons, and the captain was denied the right to take credit for sharing the whale with the community. Following the decision, baleen from the whale was inspected by scientists from the North Slope Borough Department of Wildlife Management and found to be larger than baleen normally found in a calf. With this information, and evidence that baleen length is the best indicator of whether a whale is a calf, the Board of Commissioners reversed its previous findings, determined that no infraction had occurred, and withdrew the fine and other penalties.

*Not formally infractions of the IWC but of national authorities; information on these have been traditionally reported in previous years.

Table 3

List of unresolved or previously unreported infractions from earlier seasons and follow-up actions.

Ref.	Nation	Species	Sex	Length	Date	Infraction (specify)	Explanation	Penalty/action	Investigation complete?
2011.7	Korea	Minke (1)	Unk.	5m	16/05/11	No quota (illegal catch)	A vessel operating in the area of Song-do Port, Boryoung, in Chungnam province from April 15 for the purpose of catching minke whales illegally, caught one minke whale with a harpoon in coastal waters ~23miles from Gunsan.	Total: six violators. 3 violators: 8 months imprisonment and 2 years probation. 3 violators: 6 months imprisonment and 2 years probation.	Yes

Annex J

Catches by IWC Member Nations in the 2012 and 2013 Seasons

Prepared by the Secretariat

Note: Bycatches are not included.

2012 and 2012/13 seasons									
	Fin	Humpback	Sei	Bryde's	Minke	Sperm	Bowhead	Gray	Operation
North Atlantic									
Denmark									
(West Greenland)	5[1]	10[2]	-	-	148[3]	-	-	-	Aboriginal subsistence
(East Greenland)	-	-	-	-	4	-	-	-	Aboriginal subsistence
Iceland	-	-	-	-	52[4]	-	-	-	Whaling under reservation
Norway	-	-	-	-	464[5]	-	-	-	Whaling under Objection
St. Vincent and The Grenadines	-	2[1]	-	-	-	-	-	-	Aboriginal subsistence
North Pacific									
Japan	-	-	100	34	184[6]	3	-	-	Special Permit
Russian Federation	-	-	-	-	-	-	-	143[7]	Aboriginal subsistence
USA	-	-	-	-	-	-	69[8]	-	Aboriginal subsistence
Korea	-	-	-	-	4	-	-	-	Illegal catches
Antarctic									
Japan	-	-	-	-	103	-	-	-	Special Permit[9]

2013 and 2013/14 seasons									
	Fin	Humpback	Sei	Bryde's	Minke	Sperm	Bowhead	Gray	Operation
North Atlantic									
Denmark									
(West Greenland)	9	8[1]	-	-	175[10]	-	-	-	Aboriginal subsistence
(East Greenland)	-	-	-	-	6[11]	-	-	-	Aboriginal subsistence
Iceland	134[12]	-	-	-	35	-	-	-	Whaling under reservation
Norway	-	-	-	-	594[5]	-	-	-	Whaling under Objection
St. Vincent and The Grenadines	-	4	-	-	-	-	-	-	Aboriginal subsistence
North Pacific									
Japan	-	-	100	28	95	1	-	-	Special Permit
Russian Federation	-	-	-	-	-	-	1	127[13]	Aboriginal subsistence
USA	-	-	-	-	-	-	57[14]	-	Aboriginal subsistence
Korea	-	-	-	-	12	-	-	-	Illegal catches
Antarctic									
Japan	-	-	-	-	252[15]	-	-	-	Special Permit[9]

[1]Including 1 struck and lost. [2]Including 3 struck and lost. [3]Including 4 struck and lost. [4]Including 3 lost. [5]Including 6 lost. [6]Including 2 lost. [7]Including 4 struck and lost and 8 unfit for consumption. [8]Including 14 struck and lost. [9]These catches have been discussed by the International Court of Justice. See *http://www.icj-cij.org/docket/files/148/18136.pdf* and *http://www.icj-cij.org/docket/files/148/18162.pdf.* [10]Including 9 struck and lost. [11]Including 2 struck and lost. [12]Including 5 lost. One whale listed as a fin was a fin/blue hybrid. [13]Including 2 struck and lost and 2 unfit for consumption. [14]Including 11 struck and lost. [15]Including 1 lost.

Annex K

Report of the Finance and Administration Committee

Saturday 13 September 2014, Portorož, Slovenia

SUMMARY OF MAIN OUTCOMES

Item and Agenda Item	Main outcomes
Item 3 Administrative matters	• Reports on meeting arrangements, communications and archiving were noted. • The Working Group on Providing Options to Governments with Limited Means to Participate in the Commission's Work was re-constituted and membership of the group remained open until the end of IWC/65.
Item 4 Operational effectiveness	• The Committee **endorsed** the work of the Working Group on Operational Effectiveness and Cost Saving Measures. The F&A Committee recommended that the Working Group continue its work with an enhanced membership and include: (1) consideration of the new biennial meeting pattern; and (2) a review of the operations of the Commission such that its limited resources are used effectively. A new working group may need to be established to deal with matters outside the mandate of the present Working Group. • The F&A Committee **recommended:** - a change to Rule of Procedure P.3 to allow the Secretariat to circulate a list of dates and subject titles of confidential communications to all Commissioners and Contracting Governments; and - that the Secretariat continue to identify cost savings including staffing levels and in particular will investigate options to reduce bank charges. • Chile welcomed further comments on the Draft Resolution on the Scientific Committee (IWC/65/13rev1) before it was discussed at IWC/65. • The Committee suggested that Chile should amend the Draft Resolution on Civil Society Participation and Transparency at the IWC (IWC/65/12rev1) before its presentation at IWC/65.
Item 6 Report of the intersessional correspondence group on strengthening IWC financing	• Following suggestions to the F&A Committee, the Correspondence Group on Strengthening the IWC would revise its report for presentation to IWC/65.
Item 7 Financial Statements, budgets and other matters addressed by the Budgetary Sub-Committee	• The F&A Committee **endorsed the recommendations** of the Budgetary Sub-Committee that the 2012 and 2013 Financial Statements should be adopted; that the Secretariat should provide a report on options to reduce bank charges at the next meeting of the Budgetary Sub-Committee; and that the F&A Committee take note of the Provisional Financial Statement for the year ending 31 August 2014 subject to audit. • The Committee **recommended** adoption of the proposed addition of Rule of Procedure A.3 relating to contact details of national offices responsible for making payments. • The future work plan and research budget of the Scientific Committee was discussed but consensus could not be reached on Workshops relating to Special Permits. • The Committee **recommended** adoption of the 2015-16 budget as presented in Table 25 of IWC/65/07 except including an amendment to reduce the 1.5% increase in contributions to 0%, partly by reducing the Scientific Committee contingency budget to 10%. • The Committee took note of the forecast for 2017-18 and **recommended** adoption of the proposed income and expenditure for the bridge period (IWC/65/07). • The Committee **endorsed** the Budgetary Sub-Committee recommendation to waive future media fees, but did not endorse the Budgetary Sub-Committee recommendation to increase observer fees in line with inflation; thus the observer fee will remain at its current level. • The Committee **endorsed** the Budgetary Sub-Committee recommendation that the contributions formula should be considered by the Budgetary Sub-Committee at IWC/66 and that the Secretariat should make the contributions formula available through the IWC website. • The Committee **endorsed** the Budgetary Sub-Committee proposal to change the length of term served by the Chair/Vice Chair of the Budgetary Sub-Committee to cover two biennial cycles. • The F&A Committee **proposed** that the two empty 'open seats' on the Budgetary Sub-Committee could be filled by the Chair and Vice-Chair of the Commission.

Item and Agenda Item	Main outcomes
Item 8 Establishment of a Voluntary Fund for ASW	• The F&A Committee **recommended** the establishment of the ASW Voluntary Fund as detailed in IWC/64/ASW05rev1.
Item 9 Date and place of forth-coming meetings	• The F&A Committee **recommended** that the offer by the USA to host the next Scientific Committee meeting in San Diego in May 2015 should be accepted and thanked the USA.
Item 10 Chair of the F&A Committee	• Ryan Wulff (USA) was **proposed** as the new Chair of the F&A Committee.
Item 11 Bureau membership	• Nominations for the four regional seats on the Bureau were requested.

1. INTRODUCTORY ITEMS

A list of participants is given as Appendix 1.

1.1 Appointment of Chair

Donna Petrachenko (Australia) was appointed as Chair.

1.2 Appointment of rapporteurs

Andrea Cooke, Sarah Ferriss, Harriet Gillett and Pablo Sinovas were appointed as rapporteurs.

1.3 Review of documents

The list of documents is given as Appendix 2.

2. ADOPTION OF AGENDA

The draft Agenda was adopted unchanged, see Appendix 3.

3. ADMINISTRATIVE MATTERS

3.1 Meeting arrangements and procedures

3.1.1 Need for a Technical Committee

The Technical Committee is constituted under Rule of Procedure M.7 and its primary functions are to provide advice on the management of whaling. It has not met at an Annual Meeting since IWC/51 in 1999. However, the Commission has agreed to keep the need for a Technical Committee under review. It therefore remains as a standing item on the Agenda of the F&A Committee.

3.1.2 Meeting arrangements

The Chair noted that observers at Commission meetings are currently only able to speak on a limited number of items on the Agenda, after all interventions from Contracting Governments and if time permits. The Committee was satisfied with this arrangement at the IWC/64 meeting in Panama. A draft Resolution on this topic is discussed under Item 4.5.

The USA, supported by the UK, considered that observers should be able to speak on all items on the Plenary Agenda. The UK noted that observers bring important expertise to the Commission meetings and should therefore be engaged fully on all items.

The Chair of the Commission will meet with NGOs to discuss arrangements for the IWC/65 Plenary meeting.

3.2 Communications

3.2.1 External communications: website, news updates, press and media - and -

3.2.2 Internal communications: circular communications, newsletters

The Secretariat presented IWC/65/F&A05, which summarises the IWC's communications programme to increase accessibility to, and improve understanding of, the IWC's work. The IWC's audience includes Contracting Governments, intergovernmental and other organisations, as well as the media and the general public.

New website text, increased use of images, dedicated media resources and a new quarterly bulletin are among the key measures which have been introduced recently.

The Secretariat plans to develop cost effective methods to target audiences; and will encourage stakeholders to share information.

3.3 Archiving

The Secretariat reported on the current project to provide online access to all historical Commission documents. Annual Reports since 1949; all issues of the *Journal of Cetacean Research and Management (JCRM)* and the *JCRM Supplement* (which includes the reports of the Scientific Committee); all Special Issues; all Verbatim Records from 1949-2000 and audio files of Verbatim Records from 2001. These will now be freely available on the IWC website.

The next step is to upload all meeting documents from 1949 onwards (*c.*3,000 files). These have been scanned and made into searchable pdf files where possible. The Secretariat requested financial assistance for this project, perhaps in the form of a voluntary contribution (see IWC/65/07rev1, Annex 1).

Australia commented that it has used the archive and proposed the addition of meta-data to link related files. The Secretariat will contact Australia intersessionally on this matter.

3.4 Report of the Working Group on Providing Options to Governments with Limited Means to Participate in the Commission's Work

The Commission Chair noted that there had been no intersessional progress and proposed that the Working Group be re-constituted. Japan suggested that the group meet at IWC/65 to develop Terms of Reference. It was **agreed** that Hideki Moronuki, Japan, would Chair the new group and St Lucia, Cambodia, UK and USA offered to join it. In order to ensure broad representation, membership will remain open until the end of IWC/65.

4. OPERATIONAL EFFECTIVENESS

At IWC/63 the Commission adopted Resolution 2011-1 which *inter alia* resolved to include the effectiveness of the operations of the IWC as a regular item on the Commission's Agenda, to ensure the Commission's rules and procedures are kept up to date with international practice, and to provide an opportunity to address any specific problems or issues arising in the operation of the Commission.

The Chair noted that as this was the first biennial meeting of the Commission, she would welcome any comments on this new practice.

4.1 Report of the Working Group on Operational Effectiveness and Cost Saving Measures

The Chair of the Working Group on Operational Effectiveness (WG-OE) presented a verbal report on its progress. The WG-OE was composed of USA (Chair), Australia, the UK and Japan and worked *via* e-mail. Their mandate was to deal with procedural and cost saving matters. The group initially focussed on the following areas:

(1) to review the Rules of Procedure to identify additional effectiveness measures, including those previously identified or discussed at meetings of the Commission;
(2) to review the utility and composition of existing Committees and Sub-Committees;
(3) to streamline the duration and agendas for Sub-Committee and Plenary meetings;
(4) to identify opportunities to increase use of electronic documents and web-based systems for intersessional meetings, and use of the IWC website for document storage and editing;
(5) to reduce the shipping of materials to Commission meetings; and
(6) to consider developing a strategic vision or plan for the Commission to help guide its work.

The WG-OE felt that some aspects of areas 2, 3 and 6, above, were out of the scope of their mandate, which was to deal with procedural and cost savings matters. It was suggested that a new working group should be proposed to consider these other matters.

Cost saving measures that have been implemented for IWC/65 are discussed under Item 4.3. The WG-OE supported the addition of a technical advisor on reducing accidental human impacts to whales to help meet the needs of the Commission; and is allowed for in the proposed budget (IWC/65/07).

Several changes to the Commission's Rules of Procedure and Financial Regulations are proposed at IWC/65. It was suggested that the WG-OE consider the financial implications of these changes.

This is the first meeting of the Commission since the move to a biennial meeting cycle and the establishment of a Bureau to assist the Chair and Secretariat in the intersessional period. The Bureau had met several times in the intersessional period and it has suggested a number of changes to the order of the Agenda and the duration of the meeting, which will be implemented at IWC/65. The WG-OE **recommended** member governments forward their views on the success, challenges, and lessons learned from these changes, for report at IWC/66.

The WG-OE **recommended** that it continue its work to include a review of the operations of the Commission, such that its limited financial resources are utilised in an effective manner (see also Item 4.3). Additional members for the WG-OE were sought, to broaden its representation.

Chile indicated that it would join the WG-OE. It expressed concern that in the interests of cost saving the Conservation Committee has insufficient time to go through its large agenda and suggested that in the years between IWC Plenary meetings, the Conservation Committee meet adjacent to the Scientific Committee. This would also facilitate increased cooperation between the Conservation and Scientific Committees. The Secretariat noted that a one-day meeting of the Conservation Committee would cost around £5,000 if held immediately after the Scientific Committee.

Australia, the UK and Argentina supported the statement from Chile.

The F&A Committee **endorsed the recommendations** of the WG-OE and supported the proposal from Chile.

4.2 Reporting of confidential communications

The F&A Committee **recommended** the following change to Rule of Procedure P.3 to allow the Secretariat to circulate confidential communications to all Commissioners and Contracting Governments, rather than just the Commission or Bureau:

> 3. All individual and circular communications from the Chair or Secretary to Contracting Governments shall be sent to both the Commissioner appointed under Rule A.1 and to his/her Alternate designated or to the focal or contact point created under Rule A.2. They should also be sent to all accredited intergovernmental observers. All circular communications from the Chair or Secretary to Contracting Governments shall be posted on the Commission's public website on despatch, unless the Chair, after consulting with the Bureau, deems that a confidential communication is warranted (applicable only for staff issues, infraction cases and information provided by Contracting Governments with a request that it remain confidential), in which case the communication should be sent to the Contracting Governments alone. ***Every year a*** ~~A~~ list of dates and subject titles of such confidential communications shall ***be sent to all Commissioners and Contracting Governments and*** presented to the next Biennial Meeting or to the Bureau in years when the Commission does not meet.

4.3 Cost saving measures

The Secretariat summarised the cost saving measures which have been implemented for IWC/65 (IWC/65/F&A06), including reducing freight costs and moving to paperless distribution of documents. The F&A Committee **recommended** that the Secretariat continue to identify areas where cost savings could be obtained, including staffing levels.

The Chair noted the high bank charges and low interest rates of IWC accounts and requested the Secretariat to investigate better options and report at IWC/66 in 2016.

4.4 Draft Resolution on the Scientific Committee

Chile introduced IWC/65/13rev1, a draft Resolution intended to help operational effectiveness. The Resolution would update the Rules of Procedure of the Scientific Committee to improve its work towards conservation-related matters including increased funding allocated for conservation oriented research, such as investigation on conservation or mitigation measures. The Resolution would also consolidate the mandate of the Sub-Committee on Small Cetaceans.

Chile noted that the Resolution would balance the allocation of funds to strengthen work on small cetaceans by the Scientific Committee.

Australia welcomed the Resolution, noting that they share the vision to improve communication between the Commission and the Scientific Committee, particularly in relation to funding and see this as an opportunity to improve effective communication with the Scientific Committee.

Australia, supported by Germany and the UK, noted that the *ad hoc* nature of voluntary funds can distort priorities and believed that the Commission should set priorities for the work of the Scientific Committee and fund them through the Commission budget.

Argentina (a sponsor of the Resolution), considered it would improve communication between the Scientific Committee and other parts of the Commission and that it was important to discuss small cetaceans and budget

properly for the necessary work. Germany agreed that the Scientific Committee should put more emphasis on its work on small cetaceans.

Japan, supported by Norway and Iceland, considered that the effect of the Resolution was not clear, and in particular that the Scientific Committee should be given time to discuss the proposed changes to its operation before the Commission makes any decisions. Iceland noted that the Resolution, if adopted, would reduce the range of other activities of the Scientific Committee. It does not consider that small cetaceans fall under the auspices of the IWC and therefore would have difficulty in supporting this Resolution.

St Lucia advised Chile to consult with the Scientific Committee since, as yet, no discussions appear to have taken place with them.

The Chair of the Scientific Committee considered the list of previous IWC Resolutions in Annex 1 of IWC/65/13rev1, addressing the work of the Scientific Committee from 1976-2012, to be useful. He noted the current broad range of topics addressed by the Scientific Committee, including work on small cetaceans and the importance of maintaining flexibility in the work of the Committee. He stressed that the Scientific Committee recognises the authority of the Commission, but thought it important that the Scientific Committee should have the opportunity to discuss any changes to its working methods, prior to consideration by the Commission.

The Chair suggested that more time was needed to reflect on the issue and that a full discussion should be held in the IWC/65 Plenary. She considered that the discussion highlighted the need for mechanisms to set funding priorities.

Chile, on behalf of the sponsoring countries, noted all the suggestions. The Resolution brings together previous Resolutions that relate to the Scientific Committee. Chile invited further comments prior to the Resolution being discussed in Plenary.

4.5 Draft Resolution on Civil Society Participation and Transparency at the IWC

Chile introduced IWC/65/12rev1 highlighting that the right of societal organisations to participate in the IWC is recognised in the Rules of Procedure and the text of Convention. It noted that civil society can make valuable contributions to the debate, ensure transparency, and would bring the IWC into line with other IGOs. Chile noted that the main changes proposed would mean that observers could speak on all issues, submit official documents for distribution, and participate in Plenary and the meetings of the subsidiary bodies.

The USA, supported by Australia, Italy, New Zealand, Spain, and the UK, strongly supported participation of civil society but had some concerns with the text of the Resolution: it does not allow for the need for a closed meeting (e.g. to discuss personnel matters); the current wording would allow the Bureau to be open to all observers without any limit on numbers; and the Resolution would remove the requirement for participants in the Scientific Committee to be scientifically qualified. The USA offered to work with Chile to refine the proposed Resolution.

The Chair of the Scientific Committee suggested that the Scientific Committee should normally be allowed to comment on any proposed changes to its Rules of Procedure and expressed particular concern over the proposed rule change with respect to 'Membership and Observers' and its associated implication under 'availability of data'. The Scientific Committee is a hard-working and open technical body. It has a provision for observers and for invited participants and local scientists. At present the rules state that 'Any non-governmental organisation sending an accredited observer to a meeting of the Commission may nominate a scientifically qualified observer to be present at meetings of the Scientific Committee'; this has always been liberally interpreted by Committee Chairs, especially if the observer is intending to submit a paper – in which case the Chair may suggest that the person is considered to be a non-funded IP. The Committee is a scientific body and to understand its discussions and/or participate in them requires some scientific expertise. There is already no restriction of the submission of papers to the Committee but the Scientific Committee should remain a scientific body.

Japan and Iceland shared the concerns expressed by the USA and the Scientific Committee Chair noting that scientific qualification is important for participation in the Scientific Committee. Iceland stated that it was important to understand the implications of this Resolution and how many additional people might attend IWC meetings. Following a suggestion from Japan, the Secretariat confirmed it would work with Chile to include a reference to the IWC Code of Conduct in the Resolution.

Monaco was concerned that broadening the right of NGOs to speak at meetings of the Scientific Committee should be limited to people with scientific qualifications and asked Chile and the Buenos Aires Group to consider this, to ensure the complexities of the issues under discussion were properly understood.

Argentina, Mexico, Panama and Uruguay fully supported the proposal by Chile. Uruguay noted that many national NGOs cannot participate for financial reasons so the ability to contribute documents to Plenary would be very valuable. Mexico noted that it had legislation on transparency to ensure democracy, and these values should be maintained by the IWC. Panama noted that although civil society may not always be able to participate in the Scientific Committee, it was important that the Scientific Committee listened to civil society.

The Russian Federation indicated that it supported transparency. However, it noted that the IWC is an IGO with a complicated agenda and limited time for debate so there will need to be rules on how often observers can speak.

It was suggested that Chile work with other Governments to refine the proposed Resolution so that it might reach a consensus agreement in Plenary.

5. FORMULA FOR CALCULATING CONTRIBUTIONS AND RELATED MATTERS

The Chair noted that this is a standing agenda item allowing opportunity for discussion on the formula for calculating financial contributions or any other related matters.

There were no comments under this item.

6. REPORT OF THE INTERSESSIONAL CORRESPONDENCE GROUP ON STRENGTHENING IWC FINANCING

At IWC/62 in 2010 the Commission endorsed a recommendation from the F&A Committee that it convene a small group to examine ways to integrate conservation funding into the overall budget of the IWC. The Terms of Reference stated the group would 'develop proposals for strengthening the financing of conservation with a view to striking a balance between funding for conservation and funding for management'. The Terms of Reference were last updated at IWC/63.

The UK presented the report of the continuing work of the Intersessional Correspondence Group on Strengthening IWC Financing (ICGSF), IWC/65/F&A03. It highlighted that the group sought to address IWC funding gaps without increasing the financial contributions of Contracting Governments. It made the following recommendations:

(1) the IWC should adopt the draft Acceptance of Funds Policy (IWC/65/F&A03 Annex A), and the ICGSF should further consider the need for a Code of Ethical Fundraising as part of a future strategy for strengthening IWC financing;
(2) the Secretariat should develop the financial pages on the IWC website dedicated to informing the public and prospective donors about the IWC's financial processes and funding arrangements;
(3) the IWC should establish a Voluntary Conservation Fund (either by IWC decision or Resolution at IWC/65/F&A03, Annex B) and amend the Financial Regulations as set out at Annex C;
(4) the IWC should adopt the Terms of Reference proposed at Annex D for a Conservation Fund Project Steering Group;
(5) the IWC Secretariat should work with relevant Committees and subgroups to improve the information about their work that is made available on the IWC website, including funding opportunities;
(6) working with the ICGSF and relevant IWC Chairs, the IWC Secretariat should identify and establish, or re-establish, relationships with key organisations to determine what scope there is for potential further partnerships or funding sources;
(7) IWC Committees and subgroups wishing to resource projects should establish clearly budgeted work programmes and in parallel, identify potential funding or project partners; and
(8) the ICGSF should continue its role overseeing work to strengthen IWC financing, with a call for new members and specific expertise in fundraising across the IWC family. The ICGSF should review and report on progress to the F&A Committee, and consider further recommendations for longer-term IWC financing.

Japan proposed the following changes to IWC/65/F&A03 which it would discuss with the UK:

- Annex A: amend as follows: 'These guidelines are established by ~~the Secretary of~~ the Commission ~~under Financial Regulation C.4~~ and should be read in conjunction with the Commission's Financial Regulations';
- Annex A: under point 4, amend as follows: 'carry out objectives established by ~~Contracting Governments~~ [insert: 'the Commission']';
- Annex A: Delete: ~~The use of the Commission's logo or name by entities or individuals providing voluntary contributions to the Commission may only be used on terms to be agreed by the Commission prior to its use.~~ ;
- Annex B: Delete: '~~ENCOURAGES Contracting Governments and other parties to contribute to this Fund~~' and insert 'WELCOMES contributions to this fund from contracting governments and other parties';
- Annex C: Amend as follows: 'The Commission may not accept funds for which the earmarks would undermine the Commission's ability to carry out objectives established by ~~Contracting Governments~~ [insert: 'the Commission']';
- Annex D: Under the section on Membership: amend so that it indicates that membership should be open to all Contracting Governments;
- Annex D: in the section on 'Recommendation making', amend as follows: 'Where this is not possible, the Steering Group will ~~refer to the Commission's rule of procedure E.3(a)~~ [insert: 'report this to the Commission'].'

Chile supported the recommendations, and suggested the word 'whale' be changed to 'cetacean' in Appendix 2, paragraph (e).

Italy, on behalf of EU Contracting Governments, Mexico and the USA supported the recommendations, with Mexico and the USA highlighting their particular support for the Voluntary Conservation Fund in Annex C. The USA noted that a Voluntary Fund for ASW would be a future discussion item and that there was a proposal for a Scientific Committee research fund. These may need to be considered together, which might remove the need for Annex B.

The Finance and Administration Committee concluded that the UK would finalise the report and the revised document would be presented to the IWC/65 Plenary.

7. FINANCIAL STATEMENTS, BUDGETS AND OTHER MATTERS ADDRESSED BY THE BUDGETARY SUB-COMMITTEE

The report of the Budgetary Sub-Committee is give as Appendix 4.

7.1 Review of the Provisional Financial Statement year ending 31 August 2014

7.1.1 Report of the Budgetary Sub-Committee

The F&A Committee **endorsed** the recommendations of the Budgetary Sub-Committee that the 2012 and 2013 financial statements should be adopted; that the Secretariat should provide a report on options to reduce bank charges at the next meeting of the Budgetary Sub-Committee; and that the F&A Committee take note of the Provisional Financial Statement for the year ending 31 August 2014.

7.1.2 Secretary's report on the collection of financial contributions

The Secretariat presented IWC/65/F&A04rev1 (Collection of Financial Contributions), prepared in response to a recommendation adopted at IWC/64. The document refers to the outstanding contributions due from members (£533,000 in 2013; and estimated ~£673,000 for 2014); provides an overview of the Secretariat's current procedure for collecting contributions; and presents proposals for measures to assist Contracting Governments to pay financial contributions and to alleviate the effects on the Commission. In particular, the following proposals were made:

- *Financial Representation:* add a paragraph to Rule of Procedure A, to read: '***A.3 All Contracting Governments shall furnish the Secretary of the Commission with the contact details of the national office responsible for making payment of financial contributions.***';
- *Assistance in making payment to settle outstanding debts:* clarify the meaning of Financial Regulation paragraph of F.5(e), to read (proposed new text in ***bold italic***): '(e) the provisions of this Regulation and of Financial Regulations F.1. and F.2. will cease to have effect for a Contracting Government if it makes a payment of 2 years outstanding contributions ***(including the current financial year)*** and provides an undertaking to pay the balance of arrears and the interest within a further 2 years. ***The current financial year invoice will be issued by the Secretariat on request.***'; and

- *To alleviate the effects on the Commission:* add the following recommendation: 'In applying Financial Regulation F.5, the Commission recommends that the Secretariat should issue invoices only to Contracting Governments who are less than three years in arrears of payment.

The Secretariat reported that over the last 24 months it has made every effort to recover outstanding arrears of payments. It was noted that the Commission might wish to consider options for independent (i.e. commercial) approaches to debt collection.

The Secretariat noted that issuing invoices only to Contracting Governments who are less than three years in arrears would mean that the budget is redistributed among these Governments.

Japan expressed agreement with the proposed change to Rule of Procedure A, but did not support the proposed modification to Financial Regulation F.5 given the uncertainty over which countries will be in arrears of more than three years in the future, and since this approach would not encourage engagement of Contracting Governments with the work of the Commission. Slovenia and the USA expressed similar concerns.

The F&A Committee **recommended** adoption of the proposed amendments to Rule of Procedure A. However, the F&A Committee did not recommend adoption of the proposed changes to Paragraph F.5 including measures to alleviate the effects on the Commission.

7.2 Scientific Committee future work plan and research budget

7.2.1 Report of the Budgetary Sub-Committee

The Chair of the Budgetary Sub-Committee reported that there was general agreement by the Budgetary Sub-Committee on the 2015-16 budget request presented in Table 25 of the 2014 Scientific Committee Report IWC/65/Rep01(2014).

The Chair of the Budgetary Sub-Committee introduced the recommendations from the Budgetary Sub-Committee that the F&A Committee considers the Scientific Committee's request for guidance on: an increase to the regular budget allocation in line with the expected increase in the number of CMPs; the appropriateness of a budget request for an administrative role under the Committee's regular budget; options for dealing with ~£135,000 of unspent and unallocated funds from previous years.

7.2.2 F&A Committee discussions and recommendations

Australia did not support the request to use IWC funds towards workshops for periodic review of JARPN II or the review of new Special Permit proposals. Australia also questioned why these workshops need to be separate events, rather than being items on the Scientific Committee's normal agenda.

Japan pointed out, referring to paragraph 30 of the Schedule, which stipulates that proposed permits shall be reviewed and commented on by the Scientific Committee, that reviews of special permits and past permits are the function of the Scientific Committee. Japan therefore considered that the IWC has a legal obligation to fund these reviews. Japan further pointed out that there could be legal implications in relation to Article VIII of the Convention if proponents are forced to meet the costs for those reviews, especially if countries of limited means wanted to propose special permits. For these reasons, Japan suggested that the proposal by the Scientific Committee be accepted.

While Australia recalled the obligations under paragraph 30 of the Schedule, it questioned whether the additional expenditure is necessary and why the reviews could not be included as part of the normal business of the Scientific Committee.

The UK, Chile, Argentina, Monaco, Germany, Uruguay, Panama and Mexico associated themselves with Australia's comments.

Norway considered that it would be difficult for the Scientific Committee to fulfil its obligations without the special workshops or without inviting external experts to participate in the review of proposed and previous work. Iceland, St Lucia, Grenada, Cambodia and Ghana concurred with Norway's views.

Switzerland, supported by the USA, indicated that, without prejudice to the ruling of the ICJ, they considered that the IWC should follow the advice of the Scientific Committee.

The Chair of the F&A Committee noted that no consensus could be reached on the Scientific Committee budget for these workshops.

7.3 Consideration of the proposed budget for the two year period 1 Jan 2015-31 Dec 2016, and the forecast budget for the two year period 2016-18

7.3.1 Report of the Budgetary Sub-Committee

The Chair of the Budgetary Sub-Committee reported the Budgetary Sub-Committee recommendation to adopt the proposed budget for 2015-16 as given in IWC/65/07 and take note of the forecast for 2017-18, which takes into account an expected 1.5% inflation rate in the UK. The Budgetary Sub-Committee further recommended adoption of the proposed income and expenditure for the bridge period.

7.3.2 F&A Committee discussions and recommendations

France expressed their concern with regard to the 1.5% inflation rate used, because national legislation in France means that budgets must have a 0% increase. The Secretariat noted that the 1.5% inflation rate equated to approximately £24,000. The Budgetary Sub-Committee Chair advised that if the level of funding were to be reduced, members should also suggest which areas of work to limit.

Austria enquired why the £135,000 unspent research funds could not be used to cover the inflation costs and the Secretariat clarified that the £135,000 was already incorporated into the 2015 budget and that the budget is balanced over 2015-16.

Australia questioned the £50,000 contingency fund for the Scientific Committee, noting that a 10% contingency is more customary. A 10% contingency amounts to ~£31,000, i.e. around £19,000 lower than the £50,000 in the proposed budget.

In response to a question from Monaco about the level of IWC reserve funds, the Secretariat clarified that the reserve is *ca* £1,032,000 and that, since the budget is balanced, the reserve was expected to remain at that level. The Budgetary Sub-Committee Chair noted that the IWC target reserve is 50% of its operating costs and that some of the reserve would be needed to cover the 'bridge' period.

The F&A Committee **recommended** adoption of the 2015-16 budget as presented in IWC/65/07 except including an amendment to reduce the 1.5% increase in contributions to 0%, which would be partly offset by reducing the Scientific Committee contingency budget to 10%.

The F&A Committee took note of the forecast for 2017-18 and **recommended** adoption of the proposed income and expenditure for the bridge period (IWC/65/07).

Media and observer fees were also considered under this agenda item. The Chair of Budgetary Sub-Committee noted that the Budgetary Sub-Committee recommended adoption of a proposal to waive future media fees, in accordance with standard procedures in UN organisations. The F&A Committee **endorsed** this recommendation.

The Budgetary Sub-Committee recommended adopting increased observer fees in line with the 1.5% inflation rate. The Budgetary Sub-Committee Chair pointed out that some observer organisations had requested that their fees are not used to pay for certain activities, and confirmed that the fees would be used to cover the logistical costs incurred from the additional meeting space required to accommodate observers.

Australia, supported by Monaco, suggested waiving the inflationary increase in observer fees for consistency, since Contracting Governments would not be required to cover the cost of inflation. The Secretariat clarified that this would make a difference of £645 to the budget. Monaco also suggested the level of observer contributions should be considered more generally in future. The F&A Chair noted that if the draft Resolution discussed under Item 4.5 (Draft Resolution on Civil Society Participation and Transparency at the IWC) goes forward, the level of observer fees may need to be reconsidered.

The Committee did not endorse the Budgetary Sub-Committee recommendation to increase observer fees in line with inflation and therefore the fee will remain at its current level of £580 for the first observer and £285 for additional observers.

The Budgetary Sub-Committee report also included a recommendation that the contributions formula be considered by the Budgetary Sub-Committee at IWC/66 and that the Secretariat should make the contributions formula available through the IWC website. The F&A Committee **endorsed** this recommendation.

7.4 Changes to the timing of the Commission's financial year in light of the decision to separate meetings of the Scientific Committee and Commission

The Chair of the Budgetary Sub-Committee highlighted the 'bridge' period from 1 September 2014 to 31 December 2014 resulting from the proposed alignment of the Commission's financial year with the calendar year and indicated that the reserve fund would be used to cover this period. These monies would then be returned to the reserve as Contracting Governments pay for the 'bridge' period within a four-year timeline.

7.5 Budgetary Sub-Committee operations

The Chair of the Budgetary Sub-Committee reported that it recommended amending its Terms of Reference to reflect a Budgetary Sub-Committee membership term of four years (i.e. to cover two biennial meetings). The Finance and Administration Committee **endorsed** these proposed changes.

Regarding membership of the Budgetary Sub-Committee, the Chair suggested inviting all governments to attend, noting that the Sub-Committee should have a balanced composition of Contracting Governments. He also reported that the Budgetary Sub-Committee recommended consulting on who will be the new Budgetary Sub-Committee Chair/Vice-Chair. There are currently two 'open seats' on the Budgetary Sub-Committee and the F&A Committee **propose** that these be filled by the Chair and Vice-Chair of the Commission.

8. ESTABLISHMENT OF A VOLUNTARY FUND

At IWC/64 in 2012, the F&A Committee received a recommendation from the ASW Sub-Committee to establish a Voluntary Fund whose purpose is to support work associated with the management of aboriginal subsistence whaling. Details of the proposal are given in Appendix 4 of IWC/64/ASW05rev1. The Chair of the Aboriginal Subsistence Whaling *ad hoc* Working Group (ASWWG) requested the F&A Committee to review the proposal and, if appropriate, to recommend the establishment of the Voluntary Fund to the Commission.

The Chair of the ASWWG highlighted that decisions of the IWC may result in costs for hunters and the intention of this proposal is to help hunters to implement recommendations adopted by IWC, particularly when governments are not in a position to provide financial support for these activities. He noted that previously no action was taken on the proposal by the Budgetary Sub-Committee, so it has been brought back to the F&A Committee for further discussion. The proposal includes the amendments to the Financial Regulations that would be required if the fund was established.

The F&A Committee **recommended** the establishment of the ASW Voluntary Fund which will be presented to Plenary.

9. DATE AND PLACE OF FORTHCOMING MEETINGS

The Committee thanked the USA for its kind offer to host the next meeting of the Scientific Committee in San Diego in May 2015 and **recommended** that the offer be accepted.

10. CHAIR OF THE F&A COMMITTEE

The Chair noted that this was her last meeting in the role. South Africa and the USA thanked the Chair for her excellent work. South Africa nominated, and Japan seconded Ryan Wulff from the USA as the next Chair of the F&A Committee. This was **accepted** by the F&A Committee.

11. BUREAU MEMBERSHIP

The Chair noted that nominations were needed for the four regional seats on the Bureau and asked for nominations to be given to the Chair or Vice-Chair of the Commission during IWC/65.

12. ADOPTION OF REPORT

The report was adopted by correspondence on 17 September 2014.

Appendix 1

LIST OF PARTICIPANTS

ARGENTINA
Miguel Iñíguez
Juan Pablo Paniego

AUSTRALIA
Yvette Blackman
Matthew Collis
William de la Mare
Pam Eiser
Donna Petrachenko

AUSTRIA
Andrea Nouak

CAMBODIA
Nao Thuok

CHILE
Barbara Galletti Vernazzani

COTE D'IVOIRE
Denis Kouakou-Pheny

DENMARK
Gitte Hundahl
Nette Levermann
Ole Samsing
Martin Mennecke

FINLAND
Penina Blankett

FRANCE
Martine Bigan
Marie-Anne Mortelette
Vincent Ridoux

GERMANY
Walter Duebner
Andrea Koplin

GHANA
Mike Akyeampong

GRENADA
Justin Rennie

ICELAND
Johann Gudmundsson
Gisli Víkingsson

ITALY
Caterina Fortuna
Maria Francesca Granata

JAPAN
Dan Goodman
Tatsuo Hirayama
Glenn Inwood
Takeshi Kodo
Tsuyoshi Koga
Joji Morishita
Hideki Moronuki
Naohito Okazoe
Takaaki Sakamoto
Yoshihiro Takagi

KIRIBATI
Reteta Rimon-Nikuata

KOREA, REPUBLIC OF
Duhae An
Yong Rock An

LAOS, PDR
Bounkhouang Khambounheuang

MEXICO
Yolanda Alaniz
Jorge Maksabedian de la Roquette

MONACO
Frederic Briand

NEW ZEALAND
Jillian Dempster
David Lundquist
Erin Morriss
Anita Perkins
Alexandra Smithyman

NORWAY
Egil Øen
Guri Breigutu
Truls Soløy
Ole-David Stenseth
Einar Tallaksen
Lars Walløe
Hild Ynnesdal

PANAMA
Gabriel Despaigne

RUSSIAN FEDERATION
Valentin Ilyashenko
Igor Mikhno
Maria Vorontsova

SLOVAK REPUBLIC
Zuzana Cudrakova

SLOVENIA
Andrej Bibic
Mojca Dezelak

SOUTH AFRICA
Ed Couzens
Herman Oosthuizen

SPAIN
Carmen Asencio

SAINT LUCIA
Vaughn Charles
Jeannine Compton-Antoine

SWEDEN
Jacob Hagberg

SWITZERLAND
Martin Krebs

TOGO
Kossi Ahoedo

UK
Claire Bass
Nicola Clarke
Nigel Gooding
Jennifer Lonsdale
Donna Mackay
Jamie Rendell
Mark Simmonds

USA
Robert Brownell
Doug DeMaster
Roger Eckert
Lisa Phelps
DJ Schubert
Scott Smullen
Michael Tillman
Ryan Wulff

URUGUAY
Rodrigo Garcia

CHAIR OF THE SCIENTIFIC COMMITTEE
Toshihide Kitakado

SECRETARIAT
Simon Brockington
Cherry Allison
Andrea Cooke
Gregory Donovan
Sarah Ferriss
Harriet Gillett
Sandra Holdsworth
Brendan Miller
Pablo Sinovas
Kate Wilson
David Mattila

Appendix 2

LIST OF DOCUMENTS

IWC/65/F&A		Agenda Item
01	Provisional Agenda	
02	List of documents	
03	Report of the Intersessional Correspondence Group on Strengthening IWC Financing (submitted by Australia, Costa Rica, Ecuador, France, Germany, Mexico, Monaco, UK and USA)	6
04rev1	Collection of Financial Contributions	7.1.2
05	Development of the IWC Communications Capability	3.2
06	Report on Introduction of Cost Saving Measures	4.3

Documents from previous meetings:
IWC/64/ASW5rev1: Report of the Aboriginal Subsistence Whaling Working Group, 28 May 2012, with Appendices

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Appendix 3

AGENDA

1. Introductory items
   - 1.1 Appointment of Chair
   - 1.2 Appointment of rapporteurs
   - 1.3 Review of documents
2. Adoption of Agenda
3. Administrative matters
   - 3.1 Meeting arrangements and procedures
     - 3.1.1 Need for a Technical Committee
     - 3.1.2 Meeting arrangements
   - 3.2 Communications
     - 3.2.1 Internal communications: circular communications, newsletters
   - 3.3 Archiving
   - 3.4 Report of the Working Group on Providing Options to Governments with Limited Means to Participate in the Commission's work
4. Operational effectiveness
   - 4.1 Report of the Working Group on Operational Effectiveness and Cost Saving Measures
   - 4.2 Reporting of confidential communications
   - 4.3 Cost saving measures
   - 4.4 Draft Resolution on Civil Society Participation and Transparency at the IWC
5. Formula for calculating contributions and related matters
6. Report of the Intersessional Correspondence Group on Strengthening IWC Financing
7. Financial Statements, budgets and other matters addressed by the Budgetary Sub-Committee
   - 7.1 Review of the Provisional Financial Statement year ending 31 August 2014
     - 7.1.1 Report of the Budgetary Sub-Committee
     - 7.1.2 Secretary's report on the collection of financial contributions
   - 7.2 Scientific Committee future work plan and research budget
     - 7.2.1 Report of the Budgetary Sub-Committee
     - 7.2.2 F&A Committee discussions and recommendations
   - 7.3 Consideration of the proposed budget for the two year period 1 Jan 2015-31 Dec 2016, and the forecast budget for the two year period 2016-18
     - 7.3.1 Report of the Budgetary Sub-Committee
     - 7.3.2 F&A Committee discussions and recommendations
   - 7.4 Changes to the timing of the Commission's financial year in light of the decision to separate meetings of the Scientific Committee and Commission
   - 7.5 Budgetary Sub-Committee operations
8. Establishment of a Voluntary Fund
9. Date and place of forthcoming meetings
10. Chair of the Finance and Administration Committee
11. Bureau membership
12. Adoption of Report

TERMS OF REFERENCE

The Finance and Administration Committee shall advise the Commission on expenditure, budgets, scale of contributions, Financial Regulations, staff questions, and other such matters as the Commission may refer to it from time to time (*Rules of Procedure, Rule M.8*).

Appendix 4

REPORT OF THE BUDGETARY SUB-COMMITTEE

Thursday 11 September 2014, Portorož, Slovenia

SUMMARY OF THE MAIN OUTCOMES, DECISIONS AND REQUIRED ACTIONS ARISING

Issue and Agenda Item	Main outcomes
Item 3 Audited Financial Statements for previous financial years	• The Budgetary Sub-Committee **recommended** that the 2012 and 2013 Financial Statements should be adopted and that the Secretariat should provide at the next meeting of the Budgetary Sub-Committee a report on options to reduce bank charges.
Item 4 Provisional Financial Statement year ending 31 August 2014	• The Budgetary Sub-Committee **recommended** that the Finance and Administration (F&A) Committee takes note of the Provisional Financial Statement subject to audit (IWC/65/06).
Item 5 Scientific Committee future work plan and research budget	• The Budgetary Sub-Committee **recommended** that the F&A Committee considers the Scientific Committee's request for guidance on: an increase to the regular budget allocation in line with the expected increase in the number of CMPs; on the appropriateness of a budget request for an administrative role under the Committee's regular budget; and on options for dealing with unspent and unallocated funds.
Item 6 Review of proposed budget	• The Budgetary Sub-Committee **recommended** adoption of the budget for 2015-16 and to take note of the forecast for 2017-2018. The Budgetary Sub-Committee further recommends adoption of the proposed income and expenditure for the bridge period (IWC/65/07, p.4). • The Budgetary Sub-Committee **recommended** to adopt the proposal to waive future media fees. • The Budgetary Sub-Committee **recommended** to adopt the observer fees proposed in document IWC/65/BSC05.
Item 7 Change to the Commission's financial year	• The Budgetary Sub-Committee **recommended** that the process outlined in document IWC/65/BSC03 should be adopted. • The Budgetary Sub-Committee **recommended** that the contributions formula should be considered by the Budgetary Sub-Committee at IWC/66 and that the Secretariat should make the contributions formula available through the IWC website.
Item 8 Budgetary Sub-Committee membership	• The Budgetary Sub-Committee **recommended** to amend the Terms of Reference to reflect a Budgetary Sub-Committee membership term of four years, (i.e. to cover two biennial meetings). • The Budgetary Sub-Committee **recommended** to consult on who will be the new Budgetary Sub-Committee Chair/Vice-Chair.

1. INTRODUCTORY ITEMS

A list of participants is given in Adjunct 1.

1.1 Appointment of Chair
Martin Krebs (Switzerland) was appointed Chair.

1.2 Appointment of Vice-Chair
Lisa Phelps (USA) was appointed Vice-Chair.

1.3 Appointment of rapporteurs
Pablo Sinovas and Tim Inskipp were appointed as rapporteurs.

2. ADOPTION OF AGENDA

The Agenda was adopted unchanged as presented in IWC/65/BSC01.

3. AUDITED FINANCIAL STATEMENTS FOR PREVIOUS FINANCIAL YEARS

The IWC's financial year runs from 1 September to 31 August. Accounts for two financial years have been produced since the Committee last met.

The audited accounts for both years have already been circulated to Contracting Governments by the Secretariat.

3.1 Audited accounts for financial years ending 31 August 2012 and 31 August 2013

3.1.1 & 3.2.1. Introduction by Secretary

The Secretariat presented documents IWC/65/05(2012) (Audited Financial Statements 31 August 2012) and IWC/65/05(2013) (Audited Financial Statements 31 August 2013). These documents show that both years were broadly on budget, with a surplus of £25,391 in the 2012 financial year and a surplus of £48,527 in the 2013 financial year. These surpluses were credited to the General Fund.

3.1.2 & 3.2.2. Committee discussion and recommendations

The UK noted that the accrued interest was very low and that the bank transfer fees were relatively high and suggested that the Secretariat explores options to address these high bank fees. The Secretariat explained that the bank charges are incurred when funds are transferred to other countries and noted that it had made preliminary enquiries into other methods of transferring money. The Secretariat offered to provide a brief report at the next meeting of the Budgetary Sub-Committee.

The Budgetary Sub-Committee **recommended** that the 2012 and 2013 Financial Statements should be adopted and that the Secretariat should provide at the next meeting of the Budgetary Sub-Committee a report on options to reduce bank charges.

4. PROVISIONAL FINANCIAL STATEMENT YEAR ENDING 31 AUGUST 2014

4.1 Introduction by Secretary

The Secretariat introduced IWC/65/06 (Provisional Financial Statement Year Ending 31 August 2014). This was the Secretariat's estimate of the financial position at the end of the year based upon income and expenditure to date. The forecast is made up of actual expenditure for first nine months plus a forecast for last three months of the budget cycle. The forecast is a surplus of £4,384.

4.2 Committee discussions and action arising

The Budgetary Sub-Committee **recommended** that the F&A Committee takes note of IWC/65/06.

5. SCIENTIFIC COMMITTEE FUTURE WORK PLAN AND RESEARCH BUDGET

5.1 Report of the Scientific Committee

The Chair of the Scientific Committee presented the relevant information on budgetary and administrative matters from its 2014 report (IWC/65/Rep01 (2014)). He recognised that this is the first year for the Scientific Committee has developed a budget request for a two-year period, and noted a technical difficulty due to a mismatch between the Scientific Committee working year, the Commission's biennial period and the Commission's new financial year.

The Scientific Committee, by consensus, recommends to the Commission adoption of the 2014-16 budget shown in Table 25 of the 2014 Scientific Committee Report.

The Scientific Committee requested guidance from the Commission on two aspects in relation to the reduced 2014-16 budget: whether the Scientific Committee's regular budget allocation will be increased in line with the expected increase in the number of Conservation Management Plans (CMPs); whether a budget request for an administrative role is appropriate for consideration under the Committee's regular budget.

The Chair of the Scientific Committee noted an estimate of £135,000 of unspent and unallocated money and suggested two possible options to deal with these monies: that the Committee establishes a special fund for a portion of the monies (e.g. £50,000); or that the Committee receives the full allocation.

5.2 Discussions and action arising

New Zealand noted that the SORP research coordinator is not purely an administrative role and should be reconsidered for funding on an annual basis, as opposed to funding for the first year (2015) but not for the second (2016) as suggested in the report.

The Budgetary Sub-Committee **recommended** that the F&A Committee considers the Scientific Committee's request for guidance on: an increase to the regular budget allocation in line with the expected increase in the number of CMPs; on the appropriateness of a budget request for an administrative role under the Committee's regular budget; and on options for dealing with unspent and unallocated funds.

6. REVIEW OF PROPOSED BUDGET

The Secretariat presented document IWC/65/07 (Proposed Budget for Biennial Financial Period 1 Jan 2015 to 31 Dec 2016), which includes the budget for the calendar years 2015-16, the forecast for 2017-18 and an estimate of income and expenditure for the four-month bridge period 1 Sept 2014-31 Dec 2014 created by the proposed change of financial year to a calendar year.

6.1 Secretary's introduction to the budget 1 January 2015 to 31 December 2016

The Secretariat noted a balanced budget over the biennial period 2015-16, and drew attention to the fact that the main income was from government contributions. The budget factors in the inflation rate of 1.5% to be expected in the UK.

6.2 Secretary's introduction to income and expenditure for bridge period 1 Sept 2014-31 Dec 2014

The Secretariat explained that, as a result of the proposed change of financial year to a calendar year, there would be a 'bridge' period between 1 Sept 2014 and 31 Dec 2014 and that at IWC/64 the Commission agreed that expenditure should be minimal during those four months. The Secretariat also noted that there was a need for a process to invoice member governments for this period.

6.3 Committee discussions and action arising

The Budgetary Sub-Committee **recommended** adoption of the budget for 2015-16 and to take note of the forecast for 2017-18. The Budgetary Sub-Committee further **recommends** adoption of the proposed income and expenditure for the bridge period (IWC/65/07, p.4).

The Secretariat presented document IWC/65/BSC04 (Media Accreditation Procedures for IWC Plenary Meetings), which proposes that fees are waived for all media attending future IWC Commission meetings, and that this policy is supported by an event specific accreditation process. Slovenia highlighted the importance of limiting accreditation to well-established online media. The Secretariat clarified that this is already addressed by the proposed media accreditation policy which is in line with standard procedures of UN organisations. Iceland enquired about the level of income from media fees. The Secretariat indicated that this relatively minor but that precise figures would be reported to the F&A Committee. New Zealand expressed agreement with the proposal. The Budgetary Sub-Committee **recommended** to adopt the proposal to waive future media fees.

The Secretariat presented document IWC/65/BSC05 (Level of Press and Observer fees for 2015-16), which proposes an increase (which largely corresponds to the expected inflation rate in the UK) in the proposed fee for the next meeting in 2016. The Budgetary Sub-Committee **recommended** to adopt the observer fees proposed in document IWC/65/BSC05.

7. CHANGE TO THE COMMISSION'S FINANCIAL YEAR

7.1 Adjustment of timings in the Commission's financial regulations;
7.2 Approach for providing invoices for the bridge period; and
7.3 Anticipation of the effect of the Commission's General Fund

The Secretariat presented document IWC/65/BSC03 (Process for Changing the Commission's Financial Year), which formulates the process for changing the Commission's financial year from the current 1 September one year to 31 August the following year to a calendar year. This includes changes to Rules of Procedure K1, Financial Regulation B1 and Financial Regulation E2; invoicing for the bridge period; and suspension of voting rights for non-payment of the bridge period invoice.

The Budgetary Sub-Committee **recommended** that the process outlined in document IWC/65/BSC03 should be adopted.

The Russian Federation asked about the process for determining participants' meeting fees in relation to the size of delegations and the corresponding allocation of shares. Iceland further enquired about access to the contributions formula. The Secretariat noted that the formula is currently made available through a circular sent together with the invoices, but that it could also be made available on the website if appropriate. The USA welcomed inclusion of the formula as part of the Rules of Procedure for transparency.

The Budgetary Sub-Committee noted that the contributions formula should be considered by the F&A Committee at IWC/66 and **recommended** that the Secretariat should make the contributions formula available through the IWC website.

8. BUDGETARY SUB-COMMITTEE MEMBERSHIP

The Secretariat presented document IWC/65/BSC06 (Future Membership of the Budgetary Sub-Committee).

The Chair noted that the current three-year membership term may need to be amended in line with the change to a biennial meeting cycle. The Chair of the Commission recommended moving to a four-year period.

The Budgetary Sub-Committee **recommended** to amend the Terms of Reference to reflect a Budgetary Sub-Committee membership term of four years.

The Budgetary Sub-Committee **recommended** to consult on who will be the new Budgetary Sub-Committee Chair/Vice Chair.

9. SUMMARY OF RECOMMENDATIONS TO THE F&A COMMITTEE

The main outcomes, decisions and required actions arising are summarised in Table 1.

10. ADOPTION OF REPORT

The Budgetary Sub-Committee expressed appreciation to the Secretariat for the good management of financial affairs and the support lent to the meeting. The report was adopted by correspondence on 13 September 2014.

Adjunct 1

LIST OF PARTICIPANTS

ARGENTINA
Juan Pablo Paniego
Miguel Iñíguez

AUSTRIA
Andrea Nouak

FRANCE
Martine Bigan

ICELAND
Johann Gudmundsson
Kristján Loftsson

JAPAN
Joji Morishita
Naohito Okazoe
Takaaki Sakamoto
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KOREA, REPUBLIC OF
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Lisa Phelps
Robert Brownell
DJ Schubert

CHAIR OF SCIENTIFIC COMMITTEE
Toshihide Kitakado

IWC SECRETARIAT
Simon Brockington
Cherry Allison
Greg Donovan
Sandra Holdsworth
Tim Inskipp
Pablo Sinovas
Kate Wilson

Annex L

Approved Budget for 2015 and 2016 (including Bridge Period September-December 2014) and Forecast Budget for 2017 and 2018 as Adopted at the 65th Meeting

INCOME	2014 (Sep-Dec) £	2015 (Jan-Dec) £	2016 (Jan-Dec) £	2017 (Jan-Dec) £	2018 (Jan-Dec) £
	Bridge	Proposed Budget			Forecast
Core Income					
Contributions from member governments	376,729	1,637,951	1,637,951	1,662,520	1,687,458
Interest on overdue financial contributions	0	9,700	9,700	9,700	9,700
Unspent research funds	0	135,000	0	0	0
Observers registration fees	0	0	46,000	0	46,000
UK taxes recoverable	4,130	19,400	19,400	19,400	19,400
Staff Assessments	58,209	189,107	196,750	202,938	208,517
Interest receivable	1,250	7,000	7,000	5,000	5,000
General Fund Voluntary Income					
Support for Scientific meeting	0	50,000	50,000	50,000	50,000
Support for Commission Meeting	0	0	50,000	0	50,000
Archive uploading to website	0	10,000	0	0	0
Technical Advisor on reduction of accidental human impacts	6,666	20,000	20,000	20,000	20,000
Total income	**446,984**	**2,078,158**	**2,036,801**	**1,969,558**	**2,096,075**
EXPENDITURE					
Secretariat	380,696	1,227,039	1,270,715	1,313,105	1,329,397
Publications	1,000	8,000	8,000	9,000	10,000
Scientific Committee Meeting	0	200,500	200,500	200,500	200,500
Biennial Commission Meeting	0	100,250	246,250	100,250	246,250
Bureau Meeting	0	5,000	5,000	5,000	5,000
Research expenditure	0	315,800	315,800	315,800	315,800
Scientific Committee support	0	31,000	0	0	0
Total expenditure	**381,696**	**1,887,589**	**2,046,265**	**1,943,655**	**2,106,947**
PROVISIONS					
Doubtful debts (including cancelled financial contributions)	25,300	76,000	76,000	76,000	76,000
Severance pay	3,000	38,536	39,236	39,415	37,348
Dilapidations	668	2,333	2,333	2,333	2,333
Total provisions	**28,968**	**116,869**	**117,569**	**117,748**	**115,681**
Surplus / (-) deficit for year	**36,320**	**73,700**	**(127,033)**	**(91,845)**	**(126,553)**

	2015 (Jan-Dec)	2016 (Jan-Dec)	2017 (Jan-Dec)	2018 (Jan-Dec)
	£	£	£	£
Operating costs	2,004,458	2,163,834	2,061,403	2,222,628
Operating costs x 50% (target level)	1,002,229	1,081,917	1,030,702	1,111,314
General Fund (as at end of financial year)	1,169,503	1,042,469	950,625	824,072
General Fund/target level (as %)	117%	96%	92%	74%

Annex M

Approved Research Budget for the 2015-2016 Biennial Period as Adopted at the 65th Meeting

RP no.*	Title	Relevance	2015	2015 (reduced)	2016	2016 (reduced)
AWMP01	AWMP Workshop to develop *SLAs* for the Greenland hunts	AWMP	7,000	7,000	7,000	7,000
AWMP02	AWMP developers fund	AWMP	7,000	7,000	7,000	7,000
BRG01	Development of an sex- and age-structured population dynamics model for North Pacific gray whales	BRG, AWMP, E	15,000	15,000	0	0
BRG02	Southern right whale mortalities at Península Valdés: population and health monitoring research	BRG	20,000	13,000	0	0
BRG03	Workshop to forward the modelling process to understand the status of gray whales across the North Pacific	BRG, AWMP, E	8,000	8,000	0	0
BRG04	Identification of SNP loci in gray whales using NGS sequencing approaches and gray whale samples from across the North Pacific	BRG	0	0	[11,000]	[11,000]
E01	State of the Cetacean Environment Report (SOCER)	E	3,000	3,000	3,000	3,000
E02	POLLUTION 2020	E, SM	4,000	4,000	2,000	2,000
E02b	Contaminant status, trends and risk assessments in cetaceans	E	0	0	5,000	5,000
E07	CERD pre-meeting	E	5,000	5,000	0	0
E08	Investigations of large mortality events and mass strandings	All (incl. SM)	5,000	5,000	0	0
EM01	Using baleen whale tag data to inform ecosystem models	EM	12,500	11,000	4,100	5,600
EM02	CCAMLR-IWC Workshop on the development and application of multi-species models to the Antarctic marine ecosystem	EM	1,200	1,200	4,000	4,000
HIM01	Ship strikes database coordinator	HIM	10,000	10,000	10,000	10,000
HIM02	Preventing the entanglement of whales in fishing gear	HIM, COMM	0	0	10,000	10,000
IA01	IWC-POWER cruises 2015 and 2016	IA, BRG, RMP	36,000	36,000	36,000	36,000
IA02	Assessment modelling for In-Depth Assessments of Antarctic minke and North Pacific sei whales.	IA	0	0	5,000	5,000
RMP01	Testing proposed new guidelines for evaluating spatial model-based and design-based abundance estimates	All (incl SM)	2,200	2,200	0	0
RMP02	Evaluating abundance estimates: diagnostics and testing	All (incl SM)	14,300	14,300	0	0
RMP03	Workshops to further progress on the *Implementation Reviews* for the North Atlantic minke and fin whales	RMP, AWMP	7,000	7,000	7,000	7,000
RMP04	Evaluation of density dependence parameters for inclusion in RMP testing based on energetics modelling	RMP/EM	12,000	6,000	0	6,000
RMP05	Genetic analysis to aid the formulation of plausible stock hypotheses for North Atlantic sei whales	RMP	4,100	0	0	0
RMP06	Essential computing support to the Secretariat for RMP	RMP	10,000	10,000	10,000	10,000
SC	Following up from Workshop recommendations	ALL	0	0	20,926	31,160
SH01	Synthesis of the results of the comprehensive assessment of Southern Hemisphere humpback whales	SH	1,000	1,000	1,000	1,000
SH02	Modelling support/Southern Hemisphere humpback whales	SH	2,000	2,000	2,000	2,000
SH03	Research Contract 16, Antarctic Humpback Whale Catalogue	SH	15,000	15,000	15,000	15,000
SH04	Southern Hemisphere Blue Whale Catalogue	SH	15,000	15,000	18,300	18,300
SH06	Priority tasks to support the regional conservation effort of Arabian Sea humpback whales	SH	14,573	14,573	17,290	17,290
SH07	Southern Ocean Research Partnership (IWC-SORP) coordination	SH, IA, SM	17,596	13,000	17,734	0
SP01	Workshop for periodic review of JARPN II	SP	0	0	23,000	23,000
SP02	Workshop on review of new Special Permit proposals	SP	13,000	13,000	0	0
WW01	Emerging whalewatching industry in Oman	WW	3,850	3,850	3,450	3,450
-	Invited Participants	All	76,000	76,000	76,000	76,000
TOTAL REQUEST 2014-16			**341,319**	**318,123**	**315,800**	**315,800**
Project to be considered for 2014						
E06	Climate change meeting	E	6,000	4,000		
Projects to be considered in the 2016-18 period						
E03	Sound field mapping in data-poor and data-rich priority regions	E/HIM				
E04	Masking and ship noise	E/HIM				
E05	Anthropogenic noise and stress	E, SM, BRG, SH				
Unsolicited project that would need to be resubmitted correctly						
SH05	Photo-identification analysis of blue whales from the newly discovered foraging ground in the South Taranaki Bight (NZ)	SH	1,300	0	0	

*The full proposals are available as numbered documents: SC/65b/AWMP-RP01 etc.

Annex N

Amendments to the Schedule Adopted at the 65th Meeting

At the 65th Meeting of the International Whaling Commission held in Portoroz, Slovenia, from 15-18 September, 2014, no modifications were made to the provision for zero catch limits for commercial whaling with effect from the 1986 coastal and the 1985/86 pelagic seasons.

The following amendments to the Schedule of the International Convention for the Regulation of Whaling are therefore necessary (changes in ***bold italics*** type):

Paragraphs 11 and 12, and Tables 1, 2 and 3:

- Substitute the dates 2012/2013 pelagic season and 2013 coastal season for ***2014/15*** pelagic season and ***2015*** coastal season as appropriate.

Paragraph 13(b) (3)

- 13. . . .
  (b) Catch limits for aboriginal subsistence whaling are as follows:
  (3) The taking by aborigines of minke whales from the West Greenland and Central stocks and fin whales from the West Greenland stock and bowhead whales from the West Greenland feeding aggregation and humpback whales from the West Greenland feeding aggregation is permitted and then only when the meat and products are to be used exclusively for local consumption.
  (i) The number of fin whales struck from the West Greenland stock in accordance with this subparagraph shall not exceed ~~16~~ ***19*** in each of the years ~~2010, 2011~~ ***2015, 2016, 2017*** and ~~2012~~ ***2018***.
  (ii) The number of minke whales struck from the Central stock in accordance with this sub paragraph shall not exceed 12 in each of the years ~~2008, 2009, 2010, 2011~~ ***2015 , 2016 , 2017*** and ~~2012~~ ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the quota of any subsequent years, provided that no more than 3 shall be added to the quota for any one year.
  (iii) The number of minke whales struck from the West Greenland stock shall not exceed ***164*** in each of the years ***2015, 2016, 2017*** and ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the strike quota of any of the subsequent years, provided…
  (iv) The number of bowhead whales struck off West Greenland in accordance with this sub paragraph shall not exceed 2 in each of the years ~~2008, 2009, 2010, 2011~~ ***2015, 2016, 2017*** and ~~2012~~ ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the quota of any subsequent years, provided that no more than 2 shall be added to the quota for any one year. This provision will be reviewed if new scientific data become available within the ~~5~~ **4** year period and if necessary amended on basis of the advice of the Scientific Committee.
  (v) The number of humpback whales struck off West Greenland in accordance with this sub paragraph shall not exceed ~~9~~ ***10*** in each of the years ~~2010, 2011~~ ***2015, 2016, 2017*** and ~~2012~~ ***2018,*** except that any unused portion of the quota for each year shall be carried forward from that year and added to the strike quota of any of the subsequent years, provided that no more than 2 strikes shall be added to the strike quota for any one year. This provision will be reviewed if new scientific data become available within the remaining quota period and if necessary amended on the basis of the advice of the Scientific Committee.

Annex O

Short Overview of the Work of the Scientific Committee at its 2013 and 2014 Annual Meetings

Toshihide Kitakado, Caterina Fortuna and Greg Donovan
Chair and Vice-Chair of the Scientific Committee and Head of Science of the IWC

INTRODUCTION

The new biennial schedule for Commission meeting means that this is the first time that the Commission has to formally receive two annual reports of the Scientific Committee. In order to assist the Commission's review, this paper tries to provide an informal guide and summary to the combined work undertaken by the Scientific Committee at its 2013 and 2014 Annual Meetings. It is not possible in such a short summary to cover every issue and our personal summary here has not been reviewed by the Committee and is certainly not intended to replace reading the full reports of the Scientific Committee for those meetings. This summary follows the broad headings of the Scientific Committee's report with a focus on the background to recommendations that are more directly related to the Commission itself rather than internal Committee recommendations. A full list of all recommendations is provided as an appendix. Two-year priorities, work plans and budget requests were developed for each major topic at the 2014 Annual Meeting. The numbering system below follows those of the Committee's reports where possible.

3. NATIONAL PROGRESS REPORTS ON RESEARCH [ITEM 3.2 IN BOTH REPORTS]

The Committee regularly reviews the information it requires from national progress reports on research and a number of amendments were made in 2013 and 2014. These data are important to the work of the Committee and it **recommended** that **all** member states submit them through the portal on the IWC website.

4. CO-OPERATION WITH OTHER ORGANISATIONS [ITEM 4 IN BOTH REPORTS]

The Committee **emphasised** the importance of collaboration with other organisations and in both years summarised this work and identified IWC observers to attend future meetings.

5. GENERAL MATTERS RELATED TO THE REVISED MANAGEMENT PROCEDURE (RMP) [ITEM 5 IN BOTH REPORTS]

The Committee **drew attention** to the fact that the RMP (and AWMP) approach, which was pioneered at the IWC and is now increasingly being used in fisheries management, is of broad relevance to the work of the Committee when examining status and the effects of all human-related mortality not only whaling. Lessons learned during the RMP *Implementation* process are of value in assessments generally and are being used by the Committee in a broad context.

MSY (Maximum Sustainable Yield) rates review [Items 5.1 in SC/65a; 5.1-5.2 in SC/65b]
Maximum sustainable yield rates reflect the productivity of populations and the values used are an important component in both the RMP and in assessments generally. The Committee has been undertaking a review of the available information since 2007 and this was completed in 2013. It has been **agreed** to change the way MSYR is expressed (from using 'mature' animals to animals aged 1 and above) and to cover the range 1% to 4% (this is the equivalent of 1.5% to 7% using mature animals). Future work has also been identified.

Amending the *CLA* (*Catch Limit Algorithm*) [Items 5.2-5.4 in SC/65a; 5.3-5.4 in SC/65b]
The *CLA* is the algorithm used to estimate safe levels of anthropogenic removals (direct catches, ship strikes, incidental catches) within the RMP. The Committee has been finalising its approach to reviewing potential amendments to the *CLA* since 2006 in light of a proposal submitted by Norway. A work plan was developed in 2014 to enable review of the proposal at the 2015 Annual Meeting.

Updating guidelines and annotations for the RMP [Item 5.5 in SC/65a; 5.6-5.7 in SC/65b)
The Committee regularly reviews the guidelines and annotations associated with the RMP. It has clarified an annotation on how to deal with incidental catches and it is in the process of reviewing the use of 'model-based abundance estimation' for use in the RMP and the Committee generally.

6. RMP – *IMPLEMENTATION*-RELATED MATTERS [ITEM 6 IN BOTH REPORTS]

Western North Pacific common minke whales [Item 6.1 in both reports]
In 2013, the Committee completed its 3-year *Implementation Review* of western North Pacific common minke whales. It had agreed that one 'variant' was unacceptable, six were acceptable without research and four were candidates 'with research'. The latter are variants that lead to higher catches in some specific sub-areas in this instance. RMP variants which are 'acceptable with research' need to have a research programme that the Committee agrees has a good chance of determining within ten years whether trials on which performance was not 'acceptable' should have been assigned low plausibility. It is the task of a Government to submit such a proposal if it wishes. Japan did not submit one in 2014.

With respect to a proposed joint Russia-Japan survey in 2015, the Committee had **strongly requested** that the Commission urges Russia to give permission for the survey to include its EEZ.

North Atlantic fin whales [Item 6.2 in both reports]
Aspects of this *Implementation Review* are also relevant to work in the AWMP. A technical Workshop was held in January 2014 as part of the *Implementation Review.* A work plan has been developed to complete the review in 2015.

North Atlantic common minke whales [Item 6.3 in both reports]
Aspects of this *Implementation Review* are also relevant to work in the AWMP and a joint stock structure Workshop was held in April 2014. A work plan has been developed to complete the review in 2015.

North Atlantic common sei whales [Item 6.4 in both reports]
The Committee established a process to present information at the 2015 Annual Meeting to determine whether sufficient information was available for a *pre-Implementation assessment.* Initiation of an *Implementation* follows only from a decision by the Commission.

Western North Pacific Bryde's whales [Item 6.5 in both reports]
The *Implementation Review* for Western North Pacific Bryde's whales was originally scheduled for 2013 but was postponed until 2016 to allow additional sightings and genetics data to be available and analysed. Given the expected availability of new data, the Committee agreed that the next *Implementation Review* be deferred to 2017, and that it be a 'full review'.

7. NON-DELIBERATE HUMAN-INDUCED MORTALITY OF LARGE WHALES

This item relates primarily to ship strikes and entanglement in fishing gear.

Criteria for determining cause of death [Item 7.1 in SC/65a]
The Committee agreed criteria for the determination of cause of death from carcases that will greatly assist its work, especially with respect to ship strikes but also with respect to bycatch. The Committee reiterated the need for member nations to submit data to the Committee via the ship strikes database. In addition, the Committee **endorsed** the recommendations from the Commission's euthanasia workshop.

Entanglement of large whales [Item 7.3 in SC/65a; 7.1 in SC/65b]
The Committee welcomed the work of Mattila (seconded by the USA to the IWC Secretariat in this regard). It reiterated that prevention rather than disentanglement is the ultimate solution to the entanglement problem and welcomed the forthcoming workshop. The Committee **recommended** that member nations submit bycatch data through the National Progress Reports portal. In addition, the importance of bringing information on mitigation measures and their effectiveness was emphasised.

At SC/65b, specific recommendations were developed for the Australian rock lobster fishery (see Appendix 1).

Ship strikes [Item 7.4 in SC/65a; 7.2 in SC/65b]
The Committee welcomed the work of the two ship strike co-ordinators and **recommended** continuation of this work. A large component of their work is encouraging the collection and organising verification of data through the IWC database. Examination of mitigation approaches is also important to the work of the Committee. **Recommendations** most directly relevant to the Commission concerned: improved reporting especially by member governments; working with NOAA on the use of AIS (automatic identification system) shipping data; concern and the need for action for the small (<100) Magellan Straits humpback whales and blue whales off Sri Lanka; co-operation with ACCOBAMS over shipping routes near the Hellenic Trench; extension of the seasonal management area approach for North Atlantic right whales.

The Committee welcomed co-operation with the Commission's Ship Strikes Working Group.

Marine debris [Item 7.5 in SC/65a; 7.3 and 12.6 in SC/65b]
This issue is being addressed by a two-phase workshop approach. The first, primarily scientific workshop was completed and reviewed by the Committee which **agreed** that: legacy and contemporary marine debris have the potential to be persistent, bio-accumulative and lethal to cetaceans and represent a global management challenge; and that entanglement in and intake of active and derelict fishing gear and other marine debris have lethal and sub-lethal effects on cetaceans. The Committee **endorsed** a number of recommendations on this topic and these were forwarded to the second workshop that was held recently in Honolulu.

8. ABORIGINAL SUBSISTENCE WHALING MANAGEMENT PROCEDURE (AWMP) [ITEM 8 IN BOTH REPORTS]

The Committee continued its work on this topic with the primary focus on developing long-term *SLA*s (*Strike Limit Algorithms*) for the Greenland hunts and providing long-term advice on the proposed management regime for the gray whale hunt by the Makah tribe off Washington State, USA.

Long-term *SLA*s for hunts off Greenland
The Committee has developed a safe 'interim' approach to providing advice on Greenland hunts that is valid for up to two quota blocks and is thus working to finalise long-term *SLA*s in time for the Commission's 2018 Biennial Meeting. Four *SLA*s are being developed, for humpback whales, bowhead whales, common minke whales and fin whales. The last two have some issues (e.g. stock structure, abundance) in common with RMP work and joint workshops have greatly furthered progress on those and a work plan to complete this work by 2018 at the latest has been developed.

Simultaneously, the Committee has been working to finalise *SLAs* for the humpback and bowhead whales. At the 2014 meeting, after fully reviewing the results for four candidate *SLA*s, the Committee agreed by consensus a *Humpback SLA* that meets the Commission's conservation and user objectives and **recommended** it to the Commission.

The Committee also reviewed the results for four candidate *SLA*s for the Greenlandic hunt of bowhead whales. This is more complex for a number of reasons including stock structure questions and hunting from a non-member nation. Necessary improvements were identified and it is expected to be able to produce a recommended *SLA* at the 2015 Annual Meeting.

The results from the trials for humpback and bowhead whales also confirmed the value of the interim approach.

The Committee **agreed** that work on a multispecies flexible approach could occur after the individual *SLA*s are completed.

Management regime for the Makah hunt [Item in SC/65a]
The Committee agreed in 2010 that the 'PCFG' (Pacific Coast Feeding Group) of gray whales should be treated as a separate management unit. Through a series of workshops and work at Annual Meetings, the Committee reviewed a

number of management regime options suggested by the Makah Tribe to ensure that the Commission's conservation and user objectives were met for the PCFG. After reviewing the trial results the Committee, agreed by consensus, an appropriate management regime.

Scientific aspects of an Aboriginal Whaling Scheme [Item 8.4 in SC/65a; 8.3 in SC/65b]

In 2002, the Committee **strongly recommended** that the Commission adopt the Aboriginal Subsistence Whaling Scheme. The Committee has stated in the past that the AWS provisions constitute an important and necessary component of safe management under AWMP *SLA*s and it **reaffirmed** this view as it has for the previous 12 years. [SC/65b]

Greenland conversion factors [Item 8.5 in SC/65a; 8.2 in SC/65b]

At the 2014 Annual Meeting, the Committee welcomed the full report submitted by Greenland on conversion factors (i.e. average edible products obtained per strike by species) in response to initial recommendations by a Commission special expert group (Donovan *et al*. 2010[1]) and follow-up recommendations by the Scientific Committee. It noted that the provisional conversion factors (for fin, humpback and bowhead whales – the factor recommended for common minke whales was based on sufficient data) developed by the expert group appear to overestimate the amount of edible products actually obtained (although sample sizes are small), but were generally within the confidence intervals. It also noted the low numbers of lost whales in the Greenlandic hunts.

After this full report, the Committee **agreed** that annual update reports are unnecessary for the work of the Scientific Committee. It **suggested** that collected data are submitted directly to the Commission when it meets and incorporated as necessary into need statements.

9. ABORIGINAL SUBSISTENCE WHALING MANAGEMENT ADVICE [ITEM 9 IN BOTH REPORTS]

This section of the summary focusses only on the management advice for most recent Scientific Committee meeting [SC/65b].

9.1 Bowhead whales off West Greenland (Item 9.1)

Based upon the agreed abundance estimate for 2012 (1,274, CV=0.12) and the agreed interim approach, the Committee **repeated** its advice that an annual strike limit of two whales will not harm the stock.

9.2 North Pacific gray whales

The Committee **agrees** that the *Gray Whale SLA* is the appropriate management tool for the eastern North Pacific gray whales and repeated its advice that the strike limits adopted by the Commission for the six-year block 2013-18 (i.e. 744 with a maximum of 140 in any one year) will not harm the stock. It also **agreed** that the Makah management plan (including maintenance of an ongoing research programme) recommended at SC/65a was the appropriate tool for the management of that hunt if it takes place.

[1]Donovan, G., Palka, D., George, C., Levermann, N., Hammond, P. and Witting, L. 2010. Report of the small working group on conversion factors (from whales to edible products) for the Greenlandic large whale hunt. Paper IWC/62/9 presented to the IWC Commission meeting, 21-25 June 2010, Agadir, Morocco (unpublished). 54pp. [Paper available from the Office of this Journal].

9.3 Bering-Chukchi-Beaufort (B-C-B) Seas bowhead whale

The Committee **welcomed** a new abundance estimate of 16,892 (95%CI 15,705-18,928) for 2011 (and an average annual increase of 3.7% (95% CI: 2.8-4.7%). It **agreed** that the *Bowhead SLA* is the appropriate management tool for the BCB bowhead whales and repeated its advice that the strike limits adopted by the Commission for the six-year block 2013-18 (i.e. 336 with a maximum of 67 in any one year) will not harm the stock.

9.4 Common minke whales off West Greenland

In 2009, the Committee was able to provide management advice for this stock for the first time. This year, using the Commission's agreed interim approach and last year's revised estimate of abundance (16,100 CV=0.43), the Committee **advised** that an annual strike limit of 164 will not harm the stock. The Committee welcomed information from Greenlandic samples that contributed to its work on stock structure of North Atlantic common minke whales and **encouraged** continued sample collection (and see Item 9.5 below).

9.5 Common minke whales off East Greenland

Catches of minke whales off East Greenland are believed to come from the large Central stock of common minke whales. The most recent strike limit of 12 represents a very small proportion of the Central Stock which numbers around 40,000. The Committee **repeated** its advice of last year that an annual strike limit of 12 will not harm the stock.

9.6 Fin whales off West Greenland

Based on the agreed 2007 estimate of abundance for fin whales (4,500, 95%CI: 1,900-10,100), and using the agreed interim approach, the Committee **repeated** its advice that an annual strike limit of 19 whales will not harm the stock. The Committee welcomed information from Greenlandic samples that contributed to its work on stock structure of North Atlantic fin whales and **encouraged** continued sample collection.

9.7 Humpback whales off West Greenland

Based on last year's revised and agreed estimate of abundance for humpback whales (2,704 CV=0.34) and the agreed interim approach, the Committee **agreed** that an annual strike limit of 10 whales will not harm the stock.

Furthermore, the Committee **recommended** that the new *Humpback SLA* agreed above should be used to provide management advice by the Committee in the future, following completion of the usual final validation/checking process. The Committee **noted** that the *Humpback SLA*, if used now, would provide the same management advice as the interim approach for within this period, i.e. that an annual strike limit of 10 whales will not harm the stock.

9.8 Humpback whales off St Vincent and The Grenadines

The Committee has agreed that the animals found off St Vincent and The Grenadines are part of the large West Indies breeding population (abundance estimate 11,570 95%CI: 10,290-13,390). The Commission adopted a total block catch limit of 24 for the period 2013-18. The Committee **repeated** its advice that this block catch limit will not harm the stock.

10. WHALE STOCKS

10.1 Antarctic minke whales [Item 10.1 in both reports]

The Committee is undertaking an in-depth assessment of the Antarctic minke whale, with a particular focus on whales within the Indo-Pacific region where new studies of stock structure have been presented. In 2012, the Committee formally agreed abundance estimates that showed decline in Antarctic minke whale abundance estimates (although not-significant) between two IWC circumpolar cruise sets, CPII and CPIII. A particular focus on understanding these results has been on investigating possible changes in the relative proportions of whales within the pack ice, since such regions were inaccessible to the IWC vessels. This work is ongoing and the Committee *inter alia* welcomed new work presented by Australia and Germany on this topic. It has identified a number of other work topics to address factors that drive Antarctic distribution and abundance in order to assist with the in-depth assessment.

The Committee is also continuing to work on statistical catch-at-age models in it work on assessing the status of Antarctic minke whales. The Committee has agreed a work plan to try and complete the in-depth assessment for the Indo-Pacific region at the 2015 Annual Meeting and to decide how to consider the other less-studies regions.

10.2 Southern Hemisphere humpback whales [Item 10.2 in both reports]

The Committee currently recognises seven humpback whale breeding stocks (BS) in the Southern Hemisphere, which are connected to feeding grounds in the Antarctic. It has been working on completing in-depth assessments for each breeding stock and with the work on Breeding Stocks BSD/BSE1/BSO in 2014 that work, which has taken over 8 years, has been completed. The Committee has **agreed** that a thorough review and synthesis of all of the results should be completed at next year's meeting.

A number of research recommendations were made and the importance of the Antarctic Humpback whale catalogue was recognised.

10.3 Southern Hemisphere blue whales [Item 10.3]

The Committee is evaluating blue whale information from a variety of sources to determine whether it is possible to conduct an in-depth assessment at a more detailed level than the previous circumpolar assessment in 2007. It welcomed valuable new information from IWC-SORP as well as some national research programmes. The value of blue whale photo-identification and genetic catalogues was **emphasised** and new abundance estimates from 15 IWC IDCR/SOWER cruises are being reviewed. Several research recommendations were made and a work plan developed.

10.4 In-depth assessment of North Pacific sei whales [Item 10.4 in SC/65a and Item 10.5 in SC/65b]

The Committee has been collating and evaluating the available data to determine when it will be possible to conduct an in-depth assessment of this species. Valuable new information on abundance, stock structure and distribution is available from those IWC-POWER cruises that have occurred in their distribution areas. In addition, analyses of genetic data obtained from market samples was identified as potentially valuable and two proposals for future work were endorsed in the context of the IWC Data Availability Agreement. The Committee has agreed that it has sufficient information to undertake an in-depth assessment that is expected to take two years.

10.5 Gray whales in the North Pacific [Item 10.5 in SC/65a and Items 9.2.1 and 10.6 in SC/65b]

In the light of recent information on movements of gray whales known to feed off Sakhalin Island to the eastern North Pacific (it had been though that they only migrated down the western North Pacific past Japan, Korea and China), the Committee has begun to examine the rangewide status of gray whales throughout the whole North Pacific and a workshop was held in April 2014. Good progress was made at that workshop and a workplan has been developed to complete the assessment, recognising that it will be an iterative process that will contribute both to the development of the Conservation Management Plan and to work on the AWMP.

The importance of sharing data (including comparison of photographs and genetic samples) was emphasised and recommended.

With respect to the western North Pacific, the Committee **welcomed** the conservation and research efforts of Japan and encouraged its continuation. It **reiterated** its support for the work of the IUCN WGWAP (western North Pacific Gray Whale Advisory Panel). It also expressed concern over the use of trap net fishing in the Sakhalin area and **recommended** that the appropriate authorities prohibit their use on these sensitive feeding and nursery grounds. The Committee also expressed **serious concern** over a proposed development project on the eastern shore of Sakhalin Island by Exxon Neftegaz Limited, requested additional information and urged the Russian Federation to ensure the maintenance of Piltun Lagoon.

10.6 Southern Hemisphere right whales [Item 10.6 in SC/65a and Item 10.7 in SC/65b]

The Committee completed its assessment of southern right whales in 2012 and received new information in 2013 and 2014 on a number of new and ongoing research efforts within the Southern Hemisphere. Valuable results from long-term monitoring projects were received. With respect to recommendations of most relevance to the Commission it expressed concern and the need for action with respect to the continued large annual mortality of calves at Península Valdés (a gull harassment workshop will be held in August 2014) and commended the work of a dedicated research group addressing the mortality which will support the work of the CMP. It also expressed concern and the need for action regarding information on a wind farm project near important habitat of the endangered eastern South Pacific right whale population near Isla de Chiloe.

It welcomed the progress reports on the CMPs for the southwest Atlantic and eastern South Pacific.

10.7 North Atlantic right whales [Item 10.7 in SC/65a and 10.8 in SC/65b]

The Committee has repeated its **concern** over the status of this population (SC/65a) and welcomed updated information on abundance (around 455 known individuals), trend (increase from 2007-11 of around 2.8%) and mitigation measures for shop strikes and entanglements.

10.8 North Pacific right whales [Item 10.8 in SC/65a and 10.9 in SC/65b]

The Committee has repeated its **concern** over the status of this species throughout the North Pacific (SC/65a) and welcomed new information from Japan. It **recommended** additional co-operative work on photo-identification catalogues and the development of abundance estimates from sightings data.

10.9 North Atlantic bowhead whales [Item 10.9 in SC/65a and Item 10.10 in SC/65b]
Important new information was received on the critically endangered Spitsbergen population from around Franz Josef Land which appears to be an important habitat for the population. Further work was encouraged.

10.10 Okhotsk Sea bowhead whales [Item 10.10 in SC/65a and Item 10.11 in SC/65b]
Important new information was received from research in Ulbansky Bay and Akademii Bay. Further research co-operative research efforts were encouraged. Anthropogenic threats include entanglement in fishing gear and industrial development.

10.11 Arabian Sea humpback whales [Item 10.11 in SC/65a and Item 10.12 in SC/65b]
The Committee received valuable new information on this critically endangered population. It **stressed** the importance of a regional research and conservation initiative including development of a CMP and consideration by the Conservation Committee. It developed a workplan and recommended research priorities.

10.12 International cruises [Item 10.12 in SC/65a and Item 10.13 in SC/65b]
The IWC-POWER cruises started in 2010. The programme has been through a thorough planning process by the Committee and the Committee has developed short-, medium- and long-term goals over a number of years based upon a thorough review of data available throughout the North Pacific. The short-term goal to cover all of the poorly covered areas should be completed by 2016 and work is underway designing a programme to meet the medium-term goals based upon the sightings, biopsy and photo-identification information collected in the first phase. The continuation of the programme was **recommended** and the generous support from inter alia Japan, Korea and the USA noted. The Committee also welcomed information on the improved archiving of photographic and acoustic data from the POWER and SOWER programmes.

The Committee reviewed and endorsed plans for a number of other cruises in the North Pacific and Antarctic.

10.13 Sperm whales [Item 10.13 in SC/65a and Item 10.14 in SC/65b]
An intersessional, group is investigating the possibility of beginning an in-depth assessment of sperm whales.

11. STOCK DEFINITION [ITEM 11 IN BOTH REPORTS]

Understanding population structure is essential to almost all aspects of the Committee's work. A specialist technical working group continued to:

(a) review and update as need the agreed guidelines for the preparation and analysis of genetic data within an IWC context;
(b) provide the Committee with feedback and recommendations concerning stock structure related methods and analyses presented to other sub-committees;
(c) consider the best way to use the specialist software developed under the auspices of the IWC to assist in setting management boundaries (TOSSM); and
(d) develop a reference glossary of stock related terms, to aid consistent definition of 'stocks.'

12. ENVIRONMENTAL CONCERNS

The Committee addresses a wide range of potential and actual threats to cetaceans under this agenda item.

12.1 State of the Cetacean Environment Report (SOCER) [Items 12.1 in both reports]
The SOCER provides an annual update on matters relevant to the environment and cetaceans. In 2013 the Mediterranean and Black Seas were the regional focus whilst in 2014 it was the Atlantic Ocean, Caribbean and Gulf of Mexico. The focus of the SOCER at SC/66a will be on the Pacific Ocean region; at SC/66b, it will be focused on Arctic and Antarctic regions.

12.2 Pollution [Items 12.2 in both reports]
The Committee has been working on an innovative and important project to examine the effects of certain chemical pollutants on cetaceans and to predict population level effects through its POLLUTION 2000+ programme. A new web-based tool for population modelling has been completed and is near ready to be placed on the IWC website. The report of an intersessional steering group meeting for a continuation into a new phase of the project incorporating *inter alia* new pollutants – POLLUTION 2020 - was endorsed and the programme **recommended.**

During both meetings, there was considerable attention paid to the aftermath of the Deepwater Horizon oil spill and the general question of oil spill response. The Committee **welcomed** the efforts of the scientists, particularly in the light of the continuing unusual mortality event in the Gulf of Mexico that began in 2010. It expressed **concern** at the high number of dolphin strandings and agreed that there are funding problems for the necessary long-term funding projects. The question of oil spill preparedness and prevention was raised and the need for collaboration with others, including the Arctic Council, was **stressed**, as well as the need for baseline data.

The Committee also received information on a number of other pollution-related matters including studies in Iceland, information on new non-lethal methods to examine *inter alia* stress physiology, reproductive and nutritional status, immune response, health and disease and the application of such methods and the application of such methods on gray whales feeding off Sakhalin Island (SC/65a). At SC/65b, the Committee received information on monitoring efforts to determine levels of radionucleotides in environmental samples since the 2011 Fukushima nuclear accident. The Committee welcomed this information but expressed **concern** that in some areas the levels may approach those in the 1950s and 1960s due to nuclear weapon testing; the effects on wildlife and humans remains unclear.

12.3 CERD (Cetacean Emerging and Resurging Disease) and mortality events [Items 12.3 in both reports]
The Committee established a working group to discuss this topic in 2008. Work on a website providing information on infectious and non-infectious diseases of value to both specialists and the general public is progressing well and the Committee **encouraged** this work. Work on marine *Brucella* infections was also reported and further work **recommended** including routes of transmission to humans**.**

The Committee discussed reports of unusual mortality events (UMEs) from a number of regions, several associated with morbillivirus and the Committee **encouraged** further

international collaboration in this regard. Other actual or hypothesised causes of reported UMEs to the Committee included military sonar, other acoustic disturbance and frozen water in newly constructed dykes.

12.4 Anthropogenic sound [Agenda items 12.4 both in SC/65a and SC/65b]

This has been an important topic of the Committee for a number of years. Discussions in 2013 and 2014 focussed on soundscape and noise mapping as a contribution to highlighting priority areas/sound sources. Particular emphasis was given to the results of an IWC/IQOE (International Quiet Ocean Experiment) and the need to further develop sound modelling tools for wide application. The Committee made a number of **recommendations** related to predictive modelling studies, collection of baseline data in high priority regions as well as in areas with limited data.

Other areas considered by the Committee included co-operation on noise issues relevant to marine renewable energy devices, efficiency of marine mammal observers as a mitigation tool, overall measures to reduce anthropogenic ocean noise and behavioural responses to noise.

The Committee also received the report of an expert panel review of a 2008 mass stranding event of melon-headed whales in Madagascar that found that the most likely initial cause was use of a multi-beam echosounder – this is the first time such equipment has been implicated as having an effect on cetaceans. The Committee **agreed** that this investigative model was a good approach for examining such events and **commended** the Governments of Madagascar, USA and the assistance of the IWC as well as industry and scientists.

Finally, the Committee **commended** the work of the ACCOBAMS Scientific Committee in identifying critical habitat of beaked whales to support appropriate mitigation measures.

In terms of recommendations related to sound of more direct relevance to Governments, these addressed:

(a) measures to reduce the effect of noise on the endangered Baltic sub-population;
(b) promotion of noise reducing technologies for shipping, oil and gas exploration etc.;
(c) consideration of noise exposure limits;
(d) encouraging the provision of data about noise generating activities (including industry and military) to allow improved evaluation of effects on cetaceans; and
(e) encouraging the adoption of the process described in Nowacek *et al.* (2013)[2] for minimising the effects of seismic surveys on cetaceans.

12.5 Impacts of climate change on cetaceans [Agenda items 12.5 both in SC/65a and SC/65b]

The primary focus of discussions related to developing a future work plan (an intersessional group has been established) and a summary of the results of the Commission's Arctic Workshop. The Committee **commended** the work of the workshop and noted that it had independently recommended increased co-operation with other relevant international organisations and improved collection of baseline data on health assessments, prey and critical habitats.

[2]Nowacek, D.P., Bröker, K., Donovan, G., Gailey, G., Racca, R., Reeves, R.R., Vedenev, A.I., Weller, D.W. and Southall, B.I. 2013. Responsible practices for minimizing and monitoring environmental impacts of marine seismic surveys with an emphasis on marine mammals. *Aquat. Mamm.* 39(4): 356-377.

13. ECOSYSTEM MODELLING

Under this item, the Committee reviews ecosystem modelling efforts undertaken outside the IWC, explores how ecosystem models can contribute to developing scenarios for simulation testing of the RMP; and reviews other issues relevant to ecosystem modelling within the Committee.

The focus in 2013 on outside efforts was on modelling the relationships between baleen whales and their prey by looking at two approaches to modelling forage fish and their prey. In 2014, the focus was on competition among baleen whales and approaches to measure and model it. In both cases, further work was identified recognising the complexity of the issues.

The Committee has made progress in both years with respect to incorporating ecosystem considerations further into the RMP process.

A considerable amount of time was also spent in both years on further analyses of body condition data of Antarctic minke whales. Further analyses have been suggested for consideration at the 2015 Annual Meeting. Finally in 2014, a valuable review of spatial/habitat modelling was presented.

14. SMALL CETACEANS [ITEM 14 IN BOTH REPORTS]

The primary topics (regarding species/areas) dealt with by the Committee vary each year according to venue.

14.1 [2013 – SC/65a] Review current status of selected populations of small cetaceans in East Asian Waters (China (including Taiwan), Korea, Japan and Russia (white whales only)]

This is a very large area with many species and thus the focus was on those species/areas of conservation concern and the expectation that new information would be available. The first species considered [Item 14.1.1] was the narrow-ridged finless porpoise. For Korean waters, the Committee received valuable new information from Korean scientists, and was **concerned** about the bycatch problem that appears unsustainable. Additional research recommendations were made and the Korean authorities were **commended** for their mitigation efforts and requested to supply an update in 2014.

The second species considered [Item 14.1.2] was the Indo-Pacific bottlenose dolphin of which there are several populations within the region. The Committee was **concerned** about a serious bycatch problem around Amakusa-Shimoshima Island (Japan) as well as the possibility of a lobomycosis-type disease in the area and **recommended** close monitoring and that efforts are made to reduce bycatches.

The Committee also discussed the short-finned pilot whale and Dall's porpoises around Japan. The Committee **recalled** previous concerns over these and other populations hunted of Japan and **recommended** [Item 14.4.1] up-to-date assessments of the populations concerned (i.e. common bottlenose dolphins, striped dolphins, spotted dolphins, Risso's dolphins, false killer whales and Pacific white-sided dolphins) such that catch limits are set which are sustainable with allowance for population recovery.

The Committee also considered white whales of the Okhotsk Sea. The Committee was **concerned** that live-captures in some areas of the Okhotsk Sea were seriously unsustainable and **recommended** that the Russian authorities reduced the quotas in the North Okhotsk sub-zone and authorised no removals for the West Kamchatka sub-zone until rigorous analyses of sustainability are made.

In 2014 [SC/65b], the Committee **reiterated** this advice and recommended increased research efforts in all areas of potential removals.

14.1 [2014 – SC/65b] Review of the status of small cetaceans in the eastern Mediterranean and Red Seas
Relatively little information was received on the eastern Mediterranean Sea and several areas in the region remain poorly known with respect to the status of small cetaceans. For the Adriatic Sea, no major conservation concerns were noted but it is important that monitoring work is continued in the light of extensive plans for seismic surveys. In the Aegean Sea, **concern** was expressed over the illegal use of explosives to catch fish and Greece was **requested** to stop this. The Committee **endorsed** the development of a conservation action plan for cetaceans in Turkish waters. Bycatch and illegal use of explosives were also a source of concern in Libyan waters and the authorities were **encouraged** to act. For the Levantine Basin, the Committee **recommended** work to design robust estimates of population size and the development of a cetacean conservation plan for Israeli waters.

At the Mediterranean level the Committee **reiterated** its view that the long awaited large-scale survey known as the ACCOBAMS Survey Initiative be undertaken as soon as possible. It also made a series of recommendations related to research, population structure, bycatch monitoring, identification of critical cetacean habitat in the light of actual and proposed marine activities (oil and gas, vessels etc.), regional co-operation and capacity building.

With respect to the Red Sea region, the Committee **agreed** that it was important to obtain detailed information on distribution and abundance, especially in the poorer known areas, to be able to examine possible impacts of actual and proposed marine activities.

In 2014, the Committee **welcomed** recent improvements in the implementation of the gillnet ban but **expressed concern** over the ongoing illegal driftnetting and **recommends** that countries increase enforcement. Improved efforts are needed to the identification of ports and areas affected by the illegal driftnet fishery.

14.2 Report on the Voluntary Fund for Small Cetacean Conservation Research [Item 14.2 in SC/65a and 14.3 in SC/65b]
This is an extremely valuable contribution to conservation of small cetaceans with an emphasis on developing countries and critical conservation needs. Nine projects were funded in 2011 and a further five funded in 2013 for a total of around £350,000. The Committee thanked all those countries and organisations that have made voluntary contributions.

14.3 Progress on previous recommendations [Item 14.3 in SC/65a and 14.4 in SC/65b]
The focus in this summary will be on the 2014 report.

14.3.1 Vaquita
The Committee has expressed serious concern over this species for many years. In 2014, it **reiterated its grave concern** over whether this species will survive. It made a number of **recommendations** to Mexico for urgent action regarding the illegal gillnet fishery for totoaba, trade in that fish (requires action also by the USA), replacement of all gillnets with alternative gear and evaluate action taken by continuing the acoustic monitoring programme.

14.3.2 Hector's dolphin
The Committee has expressed concern over the status of Hector's dolphins (*Cephalorhynchus hectori*) and the sub-species Maui's dolphin (*Cephalorhynchus hectori maui*) dolphins for a number of years. In 2014, it **requested** New Zealand to provide updates of its MPI science and management actions on a regular basis. With respect to Maui's dolphin, the **reiterated its grave concern** about its continued decline and recommended a number of urgent actions for New Zealand related to granting full protection within its range, especially from fishing gear.

14.3.3 Killer whales in the Russian Far East
The Committee **reiterated** its longstanding recommendation that no removals of small cetaceans (live capture or deliberate killing) should be authorised until a full assessment of sustainability has been completed and **recommended** transient and resident killer whales be managed as distinct units and that studies in the western Okhotsk Sea be continued and be expanded.

14.3.4 Irrawaddy dolphin (Mekong and Ayeyarwady dolphins)
In 2014, the Committee again **re-emphasised** that the situation in Laos and Cambodia is of **serious concern** and that without urgent intervention by the respective governments on threats including illegal gillnetting and the Don Sahong dam such as the dolphins there will be eradicated.

14.3.5 Yangtze finless porpoise
In 2014, the Committee **reiterated its grave concern** about the rapid, ongoing decline of Yangtze finless porpoises throughout their range, and **recommended** that stronger measures (regarding fishing, sand mining, pollution, habitat degradation) be taken immediately, beginning by upgrading the subspecies to State I Protected status in Chinese legislation and implementing a national action plan with the necessary policy and financial support.

14.3.6 Franciscana
The franciscana is endemic to the eastern coasts of Brazil, Uruguay and Argentina, and is regarded as one of the most threatened small cetaceans in South America due to high bycatch levels as well as increasing habitat degradation. The Committee **expressed its concern** regarding the increase of reported franciscana entanglements in sub-regions within Franciscana Management Area I and made a number of recommendations for research, management and mitigation measures.

14.3.7 Amazon River dolphins: boto and tucuxis
These species are subject to a number of threats within the regions including mercury contamination, hunting for bait and aspects of tourism. The Committee **welcomed** some efforts by Brazil to reduce threats and **encourages** governmental co-operation on action. It **reiterated its serious concerns** about the potential population implications of the intentional killing for bait and recommended research and mitigation action by the range states. It **supported** priority actions in the Brazilian National Action Plan for Small Cetaceans and **reiterated its recommendation** for an international scientific workshop'. It **encouraged** the presentation of information on mitigation measures.

14.3.8 Humpback dolphins
The Committee **welcomed** the report of an expert workshop on 'Sustainable Fisheries and the Conservation of the Critically Endangered Taiwanese White Dolphin and **endorsed** its recommendations on banning all gill and trammel nets within the known habitat (with compensation for fishermen) and strict enforcement of the existing inshore trawler ban. It all commended Committee advice with respect to three candidate wind farms planned for the

Eastern Taiwan Strait. The Committee also **welcomed** the positive steps taken at a workshop towards better protection for populations in the East Asia Ecoregion which are under pressure from a multitude of threats associated with resource competition, coastal development and habitat loss and **highlighted** the need for expediency in MPA designation and other management strategies.

14.3.9 Solomon Island (SC/65a)
The Committee received new information that **reinforced previous concerns** about the sustainability of live captures from the small population of Indo-Pacific bottlenose dolphins and it made recommendations concerning establishing a DNA register and comparison of photo-identification catalogues. The Committee, while commending the government of the Solomon Islands for funding a survey and study of drive hunts, **expressed concern** about the potential depletion of populations and **recommended** that the authorities collect better data (numbers, species, tissue samples) and support surveys to obtain robust abundance estimates.

14.3.9 Japanese drive fishery
Based on a review of information since the early 1990s, the Committee **reiterates its previous concerns and recommendations** that there is an **urgent need** for an up-to-date assessment of the targeted populations. This is especially needed for the common bottlenose dolphins subject to exploitation in the Japanese drive fisheries and live captures. Any new assessment must include, as indicated above, explicit consideration of cryptic mortality if this occurs and subsequently consider the sustainability of removals for international trade.

14.4 Takes of small cetaceans
A number of recommendations dealing with takes (i.e. bycatch, hunts and live-captures) occur elsewhere in this summary. The Committee **reiterates** its long standing recommendation that no small cetacean removals (live capture or directed harvest) should be authorised until a full and complete assessment has been made of their sustainability.

The Committee **expresses serious concern** over the threat to small cetaceans bycaught and occasionally hunted in Ghana

The Committee is developing a scaled down agenda for a Workshop on 'poorly documented hunts of small cetaceans for food, bait or cash' from that proposed in 2013. This may provide a structure for a series of regional workshops, including South East Asia, Africa and South America.

14.5 Task force approach
The Committee has **agreed** to trial a new intersessional approach for situations that are considered high priority from a conservation perspective at the species or population level, especially where the indications are that time is short and no mitigation actions are in place.

15. WHALEWATCHING (ITEM 15 IN BOTH REPORTS)

15.1 Assessing the effect of whalewatching on cetaceans (Item 15.1 in both reports)
This is a long-standing item for the Committee and in both years, and several studies from various populations were reviewed as well as modelling approaches. Swim-with operations were also considered (Item 15.4.6 in SC/65a and Item 15.4.3 in SC/65b). Recommendations of most direct relevance to member governments included:

(1) there is concern that tourism involving feeding dolphins may make the boto in Brazil more susceptible to hunting;
(2) there is continued serious concern regarding the poor management of whalewatching on the small resident bottlenose dolphin population in Bocas del Toro, Panama;
(3) for extreme situations such as Bocas del Toro, a more focussed mechanism is needed to bring them to the attention of the relevant governments and the Conservation Committee and its SWG on whalewatching than presentation of the Committee's report;
(4) consideration of the IWC guiding principles if swim-with whales is considered for Hervey Bay, Australia; and
(5) monitoring of swim-with activities in Japan.

15.2 Review of whalewatching in the regions near to the location of the Committee meeting
This is traditionally undertaken but the Committee agreed that more effort to obtain information was required to highlight the need for information and a mechanism was developed (SC/65b) to improve this with advance circulation of an initial review document for comment. It was suggested that the Conservation Committee could assist in its distribution.

15.3 Modelling work [Item 15.3.1 in both reports]
The Committee had previously established an ambitious large-scale whalewatching experiment (LaWE) but due to a lack of progress this was re-evaluated and a new working group named 'Modelling and Assessment of Whalewatching Impacts (MAWI)' in 2013 whose work continued in 2014. This work will contribute to the five-year strategic plan and should incorporate risk of collisions with whalewatching vessels.

15.4 Five-year strategic plan [Item 15.3 in SC/65a and Item 15.3.3 in SC/65b]
The discussions in 2013 discussed on reviewing the Plan and the contributions required by the Committee and in 2014, the Committee considered a draft outline of the Plan with more details of what it should contain and where and how the Committee can complete its contribution. In order to clarify the relationship between the Committee and the Commission over the development of the Handbook, it was agreed that the two whalewatching sub-committee Convenors and the Chair of the Conservation Committee should work together. It was also agreed that a budget request should be developed and forwarded to the SWG on whalewatching for submission to the Commission.

Other matters discussed that were also relevant to the Handbook concerned: guiding principles for data collection from platforms of opportunity; MAWI; review of whalewatching guidelines and regulations (Item 15.5); assessing whalewatching capacity (SC/65a); the whalewatching operators workshop (SC/65a); guiding principles for whalewatching; and making recommendations more visible.

15.5 Emerging whalewatching industries of concern [Item 15.4.7 in SC/65a and Item 15.6.1 in SC/65b]
In 2013 and 2014, the focus was on whalewatching in Oman, particularly with respect to the endangered humpback whale population of the Arabian Sea and local populations of *Sousa.* The Committee welcomed an initiative to guide and regulate the industry and hold a series of associated workshops. It **recommended** continuation of these efforts and training workshops.

16. DNA TESTING [ITEM 16 IN BOTH REPORTS]

This is a regular item on the Committee's agenda following a Commission resolution.

16.1 Review genetic methods for species, stock and individual identification

The Committee received documents from Iceland (SC/65a) and Japan (SC/65b) upon how their special permit programmes had met the Committee's guidelines for preparation of genetic samples and analyses. The Committee also received detailed technical information on the bowhead whale genetics in SC/65b.

16.2 Review results of the 'amendments' of sequences deposited in *GenBank*

This is an ongoing item and in 2013 and 2014 reports were received on discussions between *GenBank* and the Committee relevant to cetacean taxonomy and genetic samples in order to amend some existing errors.

16.3 Collection and archiving of tissue samples from catches and bycatch

The Committee **thanked** Japan, Norway and Iceland for providing the updates of the DNA registers in a newly agreed format.

16.4 Reference databases and standards for diagnostic DNA registries

The Committee **thanked** Japan, Norway and Iceland for providing detailed information on their registries.

17. SCIENTIFIC PERMITS

17.1 Expert Panel reviews [Item 17.1 in both reports]

17.1.1 Icelandic permit [SC/65a]

In accordance with 'Annex P' guidelines, an expert panel met in February 2013 to review the final reports of an Icelandic special permit programme that took 200 common minke whales from 2003-07. The full Panel report is SC/65a/Rep03[3]. A summary of the Panel's report is given in the Committee's report; there is no attempt to summarise that summary here. The Panel had made 17 short-term recommendations and 12 medium-long term recommendations. The responses to the Panel's recommendations by the proponent scientists are summarised in the Committee's report. The Committee had **thanked** the Panel for its thorough review and acknowledged the efforts of the proponent scientists in providing revised papers 40 days prior to the Annual Meeting. Comments from two groups of scientists were appended to the Committee's report.

17.1.2 JARPA II [SC/65b]

In accordance with 'Annex P' guidelines revised at the 2013 Annual Meeting, an expert panel met in February 2014 for the periodic review of the JARPA II programme. The full Panel report is SC/65b/Rep02[4]. A summary of the Panel's report is given in the Committee's report; there is no attempt to summarise that summary here. The Panel had made a number of short-term and medium-long term recommendations.

At the 2014 Annual Meeting, scientists from a number of countries had stated that it was inappropriate for the Committee to continue the review of JARPA II in light of the ICJ ruling and they did not participate in the Committee's discussions. The responses to the Panel's recommendations by the proponent scientists are summarised in the Committee's report. Comments from two groups of scientists were appended to the Committee's report.

17.2 Review of results from ongoing permits [Item 17.2 in both reports]

As in previous years, the Committee received short cruise reports on activities undertaken permits but spent relatively little time on discussion of the details. For long-term programmes, the Committee has agreed that regular periodic detailed reviews were more appropriate. However, under Item 17.4 (SC/65a), general comments were made by two groups of scientists that were appended to the Committee's report.

17.3 Review of new or continuing proposals [Item 17.5 in SC/65a and 17.3 in SC/65b]

At the 2013 Annual Meeting, Japan had announced no changes to the JARPA II or JARPN II programmes. At the 2014 Annual Meeting Japan announced that the JARPA II programme had been cancelled and that a sighting survey would take place in 2014/15. With respect to JARPN II, Japan announced a number of changes to the programme in the light of the ICJ ruling that involved a refocussing of priorities and recalculated sample sizes. The Committee **recommended** that Japan produce a more comprehensive document explaining these changes for discussion at the 2015 Annual Meeting; the information presented at SC/65b was insufficient to allow a proper evaluation. It was noted that the expert panel review of JARPN II had requested additional analyses with respect to sample sizes but that these had not yet been provided.

17.4 Work plan

The Committee agreed that the next periodic review of the JARPN II programme should take place in early 2016, following the revised Annex P process. Japan informed the Committee that it was intending to submit a new Antarctic programme for review under the revised Annex P process and timetable.

18. WHALE SANCTUARIES

18.1 Preparations for the review of the Southern Ocean Sanctuary [Item 18.1 in SC/65b]

The Terms of Reference for the Committee's review process can be found in Annex R[5] of the SC/65b report, and the Committee agreed that there was further need to consider the review process at the 2015 Annual Meeting.

In the 2004, review it had been noted that the Committee required more specific objectives for the Sanctuary. Based on direction from the Chair of the Commission and recognising there was insufficient time to complete the work at the Annual Meeting, the Committee established a correspondence group to draft a summary of important background information to assist the Commission in its discussion of objectives[6].

18.2 South Atlantic Sanctuary proposal [Item 18.2 in SC/65b]

During discussion individual Committee members made comments about the proposal. The Committee advised

[3]*Published as:* International Whaling Commission. 2014. Report of the Expert Workshop to Review the Icelandic Special Permit Research Programme, 18-22 February 2013, Reykjavik, Iceland. *J. Cetacean Res. Manage. (Suppl.)* 15:455-88.

[4]*Published as:* International Whaling Commission. 2015. Report of the Expert Workshop to Review the Japanese JARPA II Special Permit Research Programme, 24-28 February 2014, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 16:369-409.

[5]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. Annex R. Terms of Reference for Sanctuary Reviews at this Meeting. *J. Cetacean Res. Manage. (Suppl.)* 16: 355-356.

[6]That document was developed and circulated to the Committee who were given a short time to review it and it can be found as IWC/65/CCRep08.

that a revised proposal with more detail on monitoring and objectives with respect to carrying capacity and on critical habitat would assist with the full review. The Committee would also welcome information on how potential threats might be addressed in collaboration with other international bodies. The Committee requested advice on the appropriate review process and the role of outside experts. With advice from the Commission, the Committee could finalise details of the review process at the 2015 Annual Meeting and complete the review at the 2016 Annual Meeting.

19. SOUTHERN OCEAN RESEARCH PARTNERSHIP, SORP [ITEM 19 IN BOTH REPORTS]

In 2013, the Committee received the results of a pre-meeting of SORP. The Committee congratulated the SORP scientists for significant progress and endorsed a number of recommendations about the project including financial support opportunities, dissemination of information, use of 'citizen science', data archiving and publishing.

In 2014, the Committee welcomed information on a number of SORP projects and r**ecommended** their continuation. It also expressed concern that the funding situation was poor and **recommended** continuation of a funded co-ordinator within the programme to ensure good communication with the Committee and to obtain funding. It **urged** the Commission to review the funding status of this and to facilitate support for long-term research initiatives. Budget issues were also addressed under Item 26.

20. IWC LIST OF RECOGNISED SPECIES [ITEM 20 IN BOTH REPORTS]

This is a regular item of the Committee and as a result of discussions the Committee updated the IWC List. In 2014 it **agreed** to work in synchrony with the Society for Marine Mammalogy Taxonomy Committee.

21. CONSERVATION MANAGEMENT PLANS [ITEM 21 IN BOTH REPORTS]

The Committee had a major discussion of CMPs in 2013 in response to a request from the Commission. The Committee focussed on large whales but requested advice from the Commission on whether or not it wishes the Committee to develop a priority list of populations of small cetaceans for which CMPs might be of value. At the 2014 meeting it noted that he boto and franciscana might be suitable candidates.

In addition to the three populations for which CMPs are already developed (i.e. western gray whales, Southwest Atlantic population of southern right whales and Southeast Pacific population of southern right whales), the Committee had also identified the populations that could be considered for a CMP if supported by the range states. The first group is based on population status: (1) Arabian Sea humpback whales; (2) common minke whales in the coastal waters of China, Japan (especially the west coast) and Republic of Korea; (3) North Atlantic right whales; and (4) North Pacific right whales. The second group is based on knowledge of threats: (1) blue whales in the northern Indian Ocean; (2) fin whales in the Mediterranean; and (3) sperm whales in the Mediterranean. There are some other candidate populations, but these populations will re-evaluated for priority listing as additional information becomes available.

In terms of threat-based CMPs i.e. CMPs that apply to a single threat requiring international collaboration that may affect multiple species or large habitats, the Committee: (1) **recommended** a review of the template and criteria to enable better consideration of options for a threat based approach; and (2) **agreed** that the issue of marine debris is appropriate for consideration as a first threat-based CMP.

22. COMPILATION OF AGREED ABUNDANCE ESTIMATES [ITEM 22 IN BOTH REPORTS]

This is ongoing project of the Committee to *inter alia* ensure consistency in considering abundance estimates across sub-committees taking into account the use to which they are to be put, as well as providing an overall update for the Commission by ocean area. This is a major task given the many and varied estimates and methods that need to be reviewed although good progress has been made. It is hoped to complete the work by the 2016 Annual Meeting.

23. RESEARCH RESULTS AND WORKSHOP PROPOSALS [ITEM 23 IN BOTH REPORTS]

The Committee reviews and tabulates the results of funded research work each year. For 2013, this can be found in Table 7 on page 64 of IWC (2014)[7] while for 2014 it is on Table 21 on page 78 of IWC/65/Rep01 (2014)[8]. It noted that all (apart from two ongoing) projects had been successfully completed and had made major contributions to the Committee's work. The Committee noted that the proposed workshops for its 2014/15 period are essential if it is to meet its two-year work plan.

24. COMMITTEE PRIORITIES AND INITIAL AGENDA FOR THE 2015 AND 2016 MEETINGS

This summary only refers to the next period and is the first time the Committee has proposed a two-year workplan given the new biennial Commission meeting approach. This plan can be found in Table 23 on pages 79-80 of IWC/65/Rep01 (2014)[9].

25. DATA PROCESSING AND COMPUTING NEEDS FOR 2014/15

Computing is essential for many aspects of the Committee's work. The two-year plan is given in Table 24 of on page 81 of IWC/65/Rep01 (2014)[10].

26. FUNDING REQUIREMENTS FOR 2014/15 AND 2015/16

This year was the first time Committee had to develop budget request for a two-year period (and for priorities and work plan). This is of course difficult when decisions for the second year are dependent on results from the first year. The Committee **drew** attention to the practical difficulty in funding timing due to a mismatch between the Scientific Committee working year, the Commission's biennial period, and the Commission's new financial year. This could mean that the Committee is unable to schedule work in the period after it completes its Annual Meeting for up 8 months until the financial year begins on 1 January.

[7]International Whaling Commission. 2014. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 15:1-75.
[8]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 16:1-87.
[9]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 16:1-87.
[10]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 16:1-87.

The Committee made enhanced its efforts to increase transparency in its budget review process. The Committee has developed by consensus an updated procedure as summarised in Fig. 4 on page 81 of IWC/65/Rep01(2014)[11]. Using this approach, the Committee, also by consensus, **recommended** to the Commission the budget request shown in Table 25 on page 83 of IWC/65/Rep01(2014)[12]. The rationale behind the reduced budget and summary of all the proposals are found in the report.

On more general issues within the budget discussions, the Committee asked for Commission guidance on whether funding requests for scientific actions (especially long-term programmes) should be considered under the regular Committee budget (if it is then the Committee may face serious difficulties in meeting its workplan unless its budget allocation is increased). Similarly, the Committee requests advice as to whether long-term administrative requests should be considered under the Committee's regular budget (in the particular case that led to the request for advice, the Committee **urged** other SORP countries to consider additional voluntary contributions to the SORP fund.

The Committee also discussed the matter of unspent and unallocated budge money from previous years. The Secretariat has provided an accurate estimate of the extent of monies remaining unspent and unallocated from previous allocations. The estimate is £135,000 pounds in total over the last ten years. This amount has arisen from underspends due to overestimation of some workshop costs, unexpected in-kind contributions and some projects which were postponed and ultimately did not take place. Such large amounts will not accumulate in the future due to improved procedures of the Secretariat.

Regarding how to deal with this unallocated money, the Committee identified a number of possibilities. Given consideration of current economic situation and the Committee's responsibility to proceed with the work, the Committee **respectfully suggested** that on one option for a portion of the unallocated money could be for a special fund (say £50,000) to be established to the money available for the Committee in addition to the Committee's regular budget to assist with the yearly variation in the requirements.

27. WORKING METHODS OF THE COMMITTEE

The Committee reviews its working methods every year, for efficiency, transparency and fairness.

27.1 Annual Meetings [SC/65a]

The Committee instigated a number of procedures to reduce costs including shortening the meeting period. After careful review it **agreed** that changing the number of days was not feasible given its current workload but agreed to keep the matter on its agenda. It did **agree** to introduce a document deadline of 7 days before the meeting for a trial period to improve efficiency.

27.2 Increasing the support of the Scientific Committee on conservation related issues [Item 27.2 at SC/65a and 27.1 at SC/65b]

The Committee received a paper (SC/65b/SCP01) on this issue that examined the Committee's reports and made a number of recommendations. There were a number of different points of view expressed about the approach adopted by the paper and its conclusions. In conclusion, the Committee broadly **agreed** with the need to:

(1) ensure consistency and clarity over recommendations especially those concerning status, threats or action by the Commission and others;
(2) improve communication with the Commission and others on recommendations and concerns;
(3) keep track of recommendations to ensure they are referred to and/or repeated as necessary;
(4) make workshop reports more accessible; and
(5) consider updating the Rules of Procedure on specific topics of current concern.

It noted that a number of these issues are already being dealt with and **agreed** to keep the item on its agenda.

27.3 Data access under Annex P [Item 27.2 at SC/65b]

The Committee agreed by consensus to an improved and more efficient process for requests for data access under the Annex P (Guidelines for review of new and ongoing special permits) which would begin as a trial and be reviewed in the light of experience.

27.4 Improving the Scientific Committee budget review process [Item 27.3 in SC/65b]

Noting the new process agreed this year for review of the budget, the Committee also established a working group to:

(1) receive comments on how the present process went;
(2) develop revised *pro formas* to put on the Commission website; and
(3) develop a discussion document on advice to sub-groups when reviewing proposals including prioritisation and presentation of requests to the Commission.

The Committee also developed a process for more thorough review of proposals (often for field work) received that relate to broad Committee recommendations but do not arise directly from a specific request from a sub-group at the meeting in which they are proposed based upon its work plan. This is summarised in Fig.5 on page 92 of IWC/65/Rep01 (2014)[13].

28. ELECTION OF OFFICERS [ITEM 28 IN BOTH REPORTS]

The Committee **welcomed** the fact that Kitakado and Fortuna have agreed to continue in their roles, noting that their 3-year terms of office end at the 2015 Annual Meeting.

29. PUBLICATIONS [ITEM 29 IN BOTH REPORTS]

The Committee **welcomed** the news that the *Journal* was now online and open access and thanked Donovan and his team for their efforts. It **reaffirmed** the importance of the *Journal* to its work and **encouraged** further submissions to the *Journal.* It was also pleased at the progress on archiving the Committee's papers since 1950 and making them available on the website.

[11]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 16:1-87.
[12]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 16:1-87.
[13]*Published as:* International Whaling Commission. 2015. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 16:1-87.

APPENDIX 1

Text of the main Recommendations and agreements from the 2013 [SC/65a] and 2014 [SC/65b] Scientific Committee Reports. Please note that the full reports (including their annexes) need to be consulted for context. In some cases, where a recommendation was superseded in 2014 the text for 2013 has not been included.

5. REVISED MANAGEMENT PROCEDURE (RMP) – GENERAL ISSUES

MSY rates review [Agenda items 5.1 in SC/65a; 5.1-5.2 in SC/65b]

Recognising the uncertainties in the meta-analysis and the need for precaution, the Committee **recommends** that $MSYR_{1+}$=1% be adopted as a pragmatic and precautionary lower bound for use in trials. [SC/65a]

The Committee also **recommends** that the current upper bound of $MSYR_{mat}$=7% be changed to the roughly equivalent $MSYR_{1+}$=4%. (In essence, $MSYR_{1+}$=1% is roughly the equivalent of 1.5% $MSYR_{mat}$.) These recommendations have the additional practical advantage of unifying the MSYR 'currencies' of the RMP and AWMP processes. [SC/65a]

The Committee also **recommends** that the '*Requirements and Guidelines for Implementations under the RMP*'[1] be updated as given in Annex D, item 2.1.3. [SC/65a]

Matters relevant to the proposed *CLA* amendment [Agenda items 5.2-5.4 in SC/65a; 5.3-5.4 in SC/65b]

The Committee **recommends** that Allison contact the Norwegian Computing Center to resolve any final coding issues. [SC/65a]

The Committee **recommends** that Allison and Punt include the model of density-dependence in natural mortality in Annex D, Appendix 3 into the common control rule program and provide results of such test of the *CLA* to the 2015 Annual Meeting. [SC/65b]

The Committee **recommends** that Punt and Allison include the variants of the RMP considered by Aldrin and Huseby (2004)[2] in their further analyses. This item has been outstanding for many years and the Committee **confirms** its intention that the evaluation of the Norwegian proposal would be completed at the 2015 Annual Meeting. [SC/65b]

Update 'Requirements and Guidelines for Conducting Surveys' [Agenda item 5.6 in SC/65b]

To progress the update of Guidelines (both in an RMP sense and in a wider context) to: (1) assist evaluation of design-based estimates of abundance; and (2) accommodate recent (and future) developments in abundance estimation, the Committee **recommends**:

(1) development of a simple-to-use diagnostic software that uses model-based analysis to assist in evaluating design-based estimates that can be applied when design-based criteria are not strictly met;
(2) refinement of the material in SC/65b/RMP11, both in the explanatory background text and in the proposed Guidelines, on specific issues (see Annex D);
(3) hold a workshop with two objectives:
   (a) to test the proposed new Guidelines against several test cases of model-based abundance estimates made specifically for and during the workshop; and
   (b) to demonstrate and discuss the proposed diagnostic software with a wider Committee audience involved in basic line-transect abundance estimation.

Other matters [Agenda item 5.7 in SC/65b]

The Committee **agrees** that the current specifications for the RMP are sufficient but it **recommends** that annotation 26(a) to the RMP be adjusted to improved clarity as follows:

> 'Any subtraction of incidental catches from the catch limits output from the RMP as above would take place at the end of this process at the *Small Area* level, and separately at the *Medium/Large Area* level if Catch-capping was applied. However, as this is an RMS rather than an RMP feature, no wording to cover this is proposed here. Since imbalanced sex ratios in incidental catches have been taken into account in (iv) above, as this computation is with respect to the total catch, there is no need for further adjustment for this factor in this subtraction.'

6. RMP – *IMPLEMENTATION*-RELATED MATTERS

North Pacific common minke whales [Agenda item 6.1 both in SC/65a and SC/65b]

The Committee **agrees** that, according to the Committee's Requirements and Guidelines for *Implementations*[3]:

(1) variants 1, 2, 3, 4, 6 and 8 are 'acceptable without research';
(2) variants 5, 7, 9 and 11 are candidates for 'acceptable with research'; and
(3) variant 10 is 'unacceptable'.

In addition, with regard to surveys and estimates of abundance:

The Committee **recommends** that researchers conducting tagging studies on North Pacific minke whales work together with those conducting similar work in other areas, particularly in relation to tag technology and deployment. [SC/65a]

The Committee (welcomes the research plan for a sighting survey for common minke whales in the Sea of Okhotsk, including the Russian EEZ and) noted that there have been no surveys in sub-area 12 in recent years. The Committee **strongly recommends** that the Government of the Russian Federation give permission for the survey to take place in its EEZ in the Sea of Okhotsk throughout sub-area 12, given the importance of abundance estimates for sub-area 12 to the understanding of the status of common minke whales in the western North Pacific. [SC/65a]

The Committee: (a) again **strongly requests** that the Commission **urges** the Government of the Russian Federation to give permission for the survey to take place in its EEZ throughout sub-area 12, noting that there are often major difficulties making use of abundance estimates for only part of a sub-area; and (b) **recommends** that future surveys be more synoptic, as this will better facilitate their use in the RMP. [SC/65b]

[1]International Whaling Commission. 2012. Requirements and Guidelines for *Implementations* under the Revised Management Procedure. *J. Cetacean Res. Manage. (Suppl.)* 13: 495-506.
[2]Aldrin, M. and R.B. Huseby. 2007. Simulation trials 2007 for a re-tuned *Catch Limit Algorithm.* Paper SC/59/RMP4 presented to the IWC Scientific Committee, May 2007, Anchorage, USA (unpublished). 143pp. [Paper available from the Office of this Journal].

[3]International Whaling Commission. 2012. Requirements and Guidelines for *Implementations* under the Revised Management Procedure. *J. Cetacean Res. Manage. (Suppl.)* 13: 495-506.

North Atlantic fin whales [Agenda item 6.2 both in SC/65a and SC/65b]

The Committee **recommends** that a two-day Workshop is held back-to-back with an AWMP intersessional Workshop in early 2014 to reduce travel costs. [SC/65a]

The Committee **recommends** that a Workshop takes place in early 2015 to ensure that it is in a position to complete the *Implementation Review* at the 2016 Annual Meeting, if not earlier. [SC/65b]

North Atlantic common minke whales [Agenda item 6.3 both in SC/65a and SC/65b]

The Committee **recommends** the holding of a joint AWMP/RMP intersessional Workshop to consider stock structure hypotheses for common North Atlantic minke whales. [SC/65a]

The Committee **recommends** a research proposal to conduct simulation analyses to support the deliberations of the intersessional Workshop (Annex D, Appendix 4) and future considerations of stock structure for other populations (see Item 26, SC/65a report). [SC/65a]

The Committee **recommends** that a Steering Group under Walløe be established to co-ordinate planning for the 2014 *Implementation Review* (see Annex R). It **recommends** that a three day pre-meeting be held prior to the 2014 Annual Meeting to ensure that sufficient progress is made on the *Implementation Review*, noting that this *Implementation Review* could be more complicated than previous ones because the original *Implementation* was not conducted under the current Requirements and Guidelines for *Implementation.* [SC/65a]

North Atlantic sei whales [Agenda item 6.4 both in SC/65a and SC/65b]

The Committee therefore **recommends** that the intersessional group be re-established and progress [with respect to a possible *pre-Implementation assessment*] evaluated at the 2014 Annual Meeting. [SC/65a] ….and with Terms of Reference to finalise the compilation of the available data and develop a draft set of possible stock structure hypotheses for consideration during the 2015 Annual Meeting.

To maximise the amount of genetic data from the existing set of samples, the Committee **recommends** the generation and analysis of ddRAD-based SNP genotypes from the available tissue samples. In addition, it agrees that information on the distribution of sei whales from catch records be summarised by the intersessional group. [SC/65b]

Western North Pacific Bryde's whales [Agenda item 6.5 both in SC/65a and SC/65b]

The Committee **agrees** that the next *Implementation Review* be deferred to 2017, and that it be a 'full review'.

7. NON-DELIBERATE HUMAN-INDUCED MORTALITY OF LARGE WHALES

Criteria for determining cause of death [Agenda item 7.1 in SC/65a]

The Committee **recommends** that these [criteria and definitions] be adopted for the IWC ship strike database [Annex J, Appendix 2, SC/65a].

Entanglement of large whales [Agenda item 7.3 in SC/65a; 7.1 in SC/65b]

The Committee **commends** this work [of the Secretariat's technical advisor, Mattila], noting that besides assisting countries to establish relatively safe entanglement response capabilities which have already released a number of individual whales, it has stimulated other local and national initiatives on the issue of entanglement, including actions intended to both understand and mitigate them. The Committee **reiterates** that prevention rather than disentanglement is the ultimate solution. [SC/65a]

The Committee **recommends** that member nations fill out the relevant fields appropriately and provide information on efforts to estimate total bycatch of large whales. Some discrepancies in field codes were also noted with reports of ship strikes. [SC/65a]

The Committee **recommends** that a careful monitoring scheme is enacted prior to any modifications of the fishery [Western Australia rock lobster fishery], so that the effectiveness of any changes can be determined. [SC/65b]

The Committee **recommends** that the relevant authorities in Australia contact Kristy Long (co-ordinator of the USA Take Reduction Teams) and Robbins, who is using monitoring of the annual accumulation of raw wounds on both humpback and right whales in the region affected by the USA lobster fishery. [SC/65b]

The Committee **recommends** that Australia reports on any potential solutions that it tests as these could have beneficial global applications.

In addition, recognising the global nature of the problem and the Commission's recommendation to prevent entanglement, the Committee **strongly encourages** members to bring forward papers on the effectiveness of various mitigation measures to future meetings, and that a dynamic matrix or table of various. [SC/65b]

Ship strikes [Agenda item 7.4 in SC/65a; 7.2 in SC/65b]

Progress on the global database

The Committee **commends** this work [of the ship strike co-ordinators], noting that a modest financial investment by the IWC has produced good results. The Committee **recommends** that this work continues and is funded (see Item 26). The Committee also **agrees** that the co-ordinators should give priority to populations identified for CMPs for proactive data gathering outreach efforts. [SC/65a]

The Committee **reiterates** previous recommendations that member nations should submit data to the IWC's global database as soon as possible. [SC/65a]

The Committee **recommends** that the important work of the data coordinators continue, both for its value to the Commission's mitigation efforts, contribution to a better understanding of the factors that relate to risk (such as ship type and speed), as well as estimates of ship strike mortalities. [SC/65b]

Estimating rates of ship strikes, risk of ship strikes and mortality

The Committee **recommends** that NOAA collaborate with the IWC to further test this application of AIS by attempting to retrace the routes and speeds of relevant ship strikes in the IWC ship strike database. [SC/65b]

The Committee **agrees** that further surveys of blue whale distribution in the area at different times of year would provide important data. Given that Sri Lanka is not a member of the IWC, but there has been a dialogue between IWC and the Government of Sri Lanka on the issue, the Committee **recommends** that the IWC should begin to discuss possible mitigation measures with the relevant authorities and stakeholders in the area. In addition, it **recommends** that a representative from Sri Lanka be invited to relevant IWC meetings and workshops. [SC/65b]

Given the evidence for a high incidence of ship strikes from stranded sperm whales the Committee **recommends** that a dialogue should be initiated with shipping regulators and interests in the area [Hellenic Trench southwest of Greece], perhaps in conjunction with ACCOBAMS. [SC/65b]

Noting previous recommendations regarding reducing anthropogenic mortality to North Atlantic right whales [e.g. 2], the Committee **endorses** the recommendations in the paper for extension to the SMAs to cover a greater portion of vessel tracks across core migratory areas. [SC/65b]

Collaboration with the Commission's ship strikes working group including consideration of mitigation measures
The Committee **…. recommends** that the topic of defining and identifying critical whale 'hot spots' and engaging the shipping industry in the process should be an agenda item for the Commission's next Ship Strike Workshop. [SC/65a]

The Committee recognised that the Tenerife Workshop was primarily concerned with management and mitigation, and as such, **recommends** that the Commission's next Ship Strike Workshop reviews the report in full, and considers endorsing it and seeking partnerships with stakeholders to carry out appropriate recommended actions. [SC/65a]

The Committee **recommends** that similar guidance [to that in guidance documents for offshore race organisers, and for cruise ships] be developed for other classes of vessels where there may be specific issues to that type of vessel not covered by the general IMO guidance on reducing ship strikes. [SC/65b]

Marine debris [Agenda item 7.5 in SC/65a; 7.3 and 12.6 in SC/65b]
The Committee **endorses** the recommendations of the [first marine debris] Workshop (see SC/65a/Rep06 for full details), including its recommended pathology protocol and **agrees** that:

(1) legacy and contemporary marine debris have the potential to be persistent, bioaccumulative and lethal to cetaceans and represent a global management challenge; and
(2) entanglement in and intake of active and derelict fishing gear and other marine debris have lethal and sub-lethal effects on cetaceans.

Therefore the Committee **strongly agrees** that marine debris and its contribution to entanglement, exposures including ingestion or inhalation, and associated impacts, including toxicity, are welfare and conservation issues for cetaceans on a global scale and a growing concern.

The Committee **recommends** that the Commission and the Secretariat take prompt action to help better understand and address this growing problem, including:

(1) providing data on rates of marine debris interactions with cetaceans into the national progress reports and supporting the second marine debris Workshop (which will have mitigation and management as its focus);
(2) strengthening capacity building in the IWC entanglement response curriculum and adding information on marine debris;
(3) building international partnerships with other relevant organisations and stakeholders including an effective transfer of information about on-going research and debris-reduction and removal programmes and the international and national marine debris communities;
(4) developing programmes to remove derelict gear and schemes to reduce the introduction of new debris; and
(5) incorporating consideration of marine debris into IWC conservation management plans where appropriate and to consider making it the focus of a plan in its own right.

The Committee **recommends** discussions with the *ad hoc* Progress Report group and Secretariat with the aim of adding agreed fields for inclusion of such records in the online submissions portal. [SC/65b]

8. ABORIGINAL SUBSISTENCE WHALING MANAGEMENT PROCEDURE (AWMP)

Matters arising out of the *Implementation Review* for eastern North Pacific gray whales [Item 8.1 in SC/65a]
In conclusion, the Committee **agrees** that the conservation performance of the proposed Makah whaling management plan has now been fully examined within the *SLA* evaluation framework. The Committee **agrees** that ideally before an *Implementation Review* is conducted, the recommended rangewide Workshop be held.

Progress on *SLA* development for the Greenlandic hunts [Item 8.3 in SC/65a; 8.1 in SC/65b]
Bowhead whales
With respect to (3) the Committee **strongly encourages** scientists from Canada and Greenland to co-operate on issues related to stock structure and abundance that may allow revision of the trial structure at a future *Implementation Review.* [SC/65b]

The Committee **concludes** that further work should be undertaken by the developers during the coming year. [SC/65b]

Humpback whales
The Committee **agrees** that the performance of the '*Interim SLA*' in these trials confirmed the earlier recommendation of the Scientific Committee that it was indeed a suitable *SLA,* at least for up to two block quotas. However, the Committee also **agrees** that for the longer 100-year period, the results showed that better performance than the '*Interim SLA*'. [SC/65b]

The Committee **agrees** that the performance of two of the candidate *SLA*s (*SLA*s 3 and 4) meets the Commission's objectives in terms of conservation and need. [SC/65b]

the Committee **recommends** that *SLA3* (hereafter the *Humpback SLA*) be used to provide long-term management advice to the Commission on the subsistence hunt of humpback whales off West Greenland, subject to final validation of the code by the Secretariat and archive running of the full set of statistics and graphical output. [SC/65b]

Common minke whales off West Greenland
The Committee **agrees** that framework developed for the RMP *Implementation Review* (Annex D, Appendix 5, Adjunct 5) is applicable to progress work on *SLA* development. [SC/65b]

Fin whales off West Greenland
The Committee **confirms** that the general trial specifications developed for the *Implementation Review* for North Atlantic fin whales are suitable for testing *SLA*s in the West Greenland area. It **agreed** that priority should be given to development of an *SLA* for minke whales, in view of the greater contribution of minke whales to the overall interspecies need satisfaction for Greenland. [SC/65b]

Scientific aspects of an Aboriginal Whaling Scheme [Agenda item 8.4 in SC/65a; 8.3 in SC/65b]
In 2002, the Committee **strongly recommended** that the Commission adopt the Aboriginal Subsistence Whaling

Scheme[4]. The Committee has stated in the past that the AWS provisions constitute an important and necessary component of safe management under AWMP *SLA*s and it **reaffirms** this view as it has for the previous 12 years. [SC/65b]

Greenland conversion factors [Agenda item 8.5 in SC/65a; 8.2 in SC/65b]
While aware of the logistical difficulties involved in obtaining these data, it **repeats its recommendations** of last year [for a full report] [SC/65a]

Recognising (1) the difficult field conditions; (2) the relatively low number of catches (and thus slow increase in sample size) of the species for which the conversion factors were deemed provisional; (3) the fact that the new data, albeit few, did not suggest that the provisional factors from the 2010 study required major modification: and (4) that the information was not required for *SLA* development, the Committee **agrees** that annual update reports are unnecessary for the work of the Scientific Committee. It **suggests** that data are submitted directly to the Commission when it meets and incorporated as necessary into need statements. [SC/65b]

9. ABORIGINAL SUBSISTENCE WHALING MANAGEMENT ADVICE

9.1 Eastern Canada and West Greenland bowhead whales [Agenda item 9.1 both in SC/65a and SC/65b]

The Committee also **encourages** the Government of Canada to continue research on Eastern Canadian bowheads.

Management advice
Using the interim safe approach[5] as endorsed by the Commission, the Committee **agrees** that the current annual limit of two strikes for Greenland will not harm the stock. It was also aware that catches from the same stock have been taken by a non-member nation, Canada. Should Canadian catches continue at a similar level as in recent years, this would not change the Committee's advice with respect to the strike limits agreed for West Greenland.

9.2 Eastern North Pacific gray whales [Agenda item 9.2 both in SC/65a and SC/65b]

9.2.1 New information
The summed estimates of migration abundance ranged from 17,820 (95% Highest Posterior Density Intervals [HPDI]=16,150-19,920) in 2007/8 to 21,210 (95% HPDI=19,420-23,230) in 2009/10, consistent with previous estimates and indicative of a stable population size. The Committee welcomes and **accepts** the new population estimates. [SC/65a]

The Committee thanked Urbán and his colleagues for the interesting results from the studies in the [Mexican] breeding lagoons and **encourages** the continuation of those studies that will contribute greatly to the proposed intersessional rangewide gray whale Workshop (see Items 23 and 26). [SC/65a]

The Committee thanked the authors for this interesting and important work examining harvested gray whales. It encouraged the work on photo-identification of harvested whales which is now beginning.

Management advice
As was the case last year, the Committee **agrees** that the *Gray Whale SLA* remains the appropriate tool to provide management advice for eastern North Pacific gray whales taken off Chukotka; the question of the Makah hunt and whales from the Pacific Coast Feeding Group is considered under Item 8.1. The Commission adopted catch limits for a six-year block in 2012, i.e. 2013-18. The total number of gray whales taken shall not exceed 744 with a maximum in any one year of 140. The Committee **agrees** that these limits will not harm the stock.

9.3 Bering-Chukchi-Beaufort Seas Bowhead whale (BRG) [Agenda item 9.3 both in SC/65a and SC/65b]

9.3.1 New information
The resulting 2011 abundance estimate is 16,892 (95% CI: 15,704-18,928). The annual increase rate is estimated to be 3.7% (95% CI: 2.8%-4.7%). These abundance and trend estimates are consistent with previous findings. [SC/65a]

The Committee thanked the authors, recognising the substantial field and analytical work that underlies the new abundance estimate. Discussion of the analytical approach can be found in Annex G, item 2.1. In conclusion, the Committee **accepts** this estimate and **endorses** it for use with the *Bowhead Whale SLA*. [SC/65a]

9.3.3 Management advice
The Committee **endorses** the abundance estimate of 16,892 (95% CI: 15,704-18,928) for spring 2011. It was noted that the next survey should be completed by 2021 based on the provisional guidelines in the Aboriginal Whaling Scheme (see Item 8.4).

The Committee **agrees** that the *Bowhead Whale SLA* continues to be the most appropriate way for the Committee to provide management advice for this population of bowhead whales. The Commission adopted catch limits for a six-year block in 2012, i.e. 2013-18. The total number of strikes shall not exceed 336 with a maximum of 67 in any one year (with a carryover provision). The Committee **agrees** that these limits will not harm the stock.

9.4 Common minke whale stocks off Greenland (AWMP) [Agenda item 9.4 in SC/65a; items 9.4 and 9.5 in SC/65b]

9.4.1 West Greenland
NEW INFORMATION
The Committee **welcomes** the fact that nearly 80% of the catch had been sample in 2012 and **encourages** continued sample collection. [SC/65a]

This year, the Committee adopted a revised estimate of abundance for the 2007 survey. The revised published estimate (16,100, CV=0.43) was slightly lower than that first agreed in 2009. The Committee noted that this estimate is an underestimate of the total population by an unknown amount. [SC/65a]

MANAGEMENT ADVICE
This year, using the agreed interim approach and the revised estimate of abundance given above, the Committee **advises** that an annual strike limit of 164 will not harm the stock. It **draws attention** to the fact that this is 14 whales fewer than its advice of last year due to the revised 2007 abundance estimate.

9.4.2 East Greenland
NEW INFORMATION (INCLUDING CATCH DATA AND AGREED ABUNDANCE ESTIMATES)
The Committee was **pleased** to note that genetic samples were obtained [in 2012] from all of minke whales caught in

[4]International Whaling Commission. 2003. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 5: 1-92.
[5]International Whaling Commission. 2009. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 11: 16.

East Greenland (these could be used *inter alia* to determine the sex of the unknown animals). The Committee **again emphasises** the importance of collecting genetic samples from these whales, particularly in light of the proposed joint AWMP/RMP Workshop (see Annex D).

MANAGEMENT ADVICE

The Committee **repeats** its advice of last year that a strike limit of 12 will not harm the stock.

9.5 Fin whales off West Greenland (AWMP) [Agenda item 9.5 in SC/65a; items 9.6 in SC/65b]

9.5.1 New information

The Committee was **pleased** to note that genetic samples were obtained from three [of four] whales [in 2012]. It **re-emphasises** the importance of collecting genetic samples from these whales, particularly in the light of the proposed work to develop a long-term *SLA* for this stock. [SC/65a]

9.5.2 Management advice

Based on the agreed 2007 estimate of abundance for fin whales (4,500; 95%CI: 1,900-10,100), and using the agreed interim approach, the Committee **repeats** its advice that an annual strike limit of 19 whales will not harm the stock.

9.6 Humpback whales off West Greenland [Agenda item 9.6 in SC/65a; items 9.7 in SC/65b]

9.6.1 New information

The Committee was **pleased** to learn that genetic samples were obtained from all of these whales [in 2012] and that Greenland was contributing fluke photographs to the North Atlantic catalogue – four have been submitted from whales taken since 2010. The Committee again **emphasises** the importance of collecting genetic samples and photographs of the flukes from these whales, particularly with respect to the MoNAH and YoNAH initiatives. [SC/65a]

The Committee **accepts** the revised fully corrected abundance estimate for West Greenland from the 2007 survey of 2,704 (CV=0.34) for the strip census abundance estimate (see Item 8.3.2.2 above). The agreed annual rate of increase of 0.0917 (SE=0.0124) remains unchanged. [SC/65a]

9.6.2 Management advice

Based on the revised agreed estimate of abundance for humpback whales given above and using the agreed interim approach, the Committee **agrees** that an annual strike limit of 10 whales will not harm the stock.

9.7 Humpback whales off St Vincent and The Grenadines [Agenda item 9.7 in SC/65a; items 9.8 in SC/65b]

9.7.1 New information

No new information or catch data were provided in time for consideration by the Scientific Committee although information has been requested by the Secretariat. There is one sample collected from a humpback whale taken on 11 April 2012 in the SWFSC tissue archive. The Committee **welcomes** this information. [SC/65a]

A total of four humpback whales were landed in St Vincent and The Grenadines in 2013 and individual data on these whales have been supplied to the Secretariat. Skin and/or blubber samples were collected from all four whales. The Committee welcomed this information from St Vincent and The Grenadines and strongly encourages continued tissue sampling and collection of fluke photographs where possible. [SC/65b]

9.7.2 Management advice

The Committee repeated its previous **strong recommendations** that St Vincent and The Grenadines: [SC/65a]

(1) provide catch data, including the length of harvested animals, to the Scientific Committee; and
(2) that genetic samples be obtained for any harvested animals as well as fluke photographs, and that this information be submitted to appropriate catalogues and collections.

The Committee **repeats** its advice that this block catch limit will not harm the stock.

The Committee **draws the Commission's attention** to the unofficial reports of attempts to land a humpback whale in Grenada; the Schedule specifies that the quota applies only to Bequians of St Vincent and The Grenadines. It requests that the Secretariat contacts the Government of Grenada to obtain official information on this incident. [SC/65a]

10. WHALE STOCKS

Antarctic minke whales [Agenda item 10.1 both in SC/65a and SC/65b]

The Committee is undertaking an in-depth assessment of the Antarctic minke whale. In 2012, the Committee formally agreed abundance estimates[6]. The Committee has for some years been working towards explaining a putative decline in Antarctic minke whale abundance between CPII and CPIII. Aside from the statistical catch-at-age modelling work, a particular focus has been on investigating possible changes in the relative proportions of whales within the pack ice, since such regions were inaccessible to the IDCR/SOWER vessels. For that purpose, a modelling work and helicopter surveys have been conducted so far and those works will continue.

The Committee congratulated the first time achievement of tag deployment for this species in the Ross Sea and the western Antarctic Peninsula, and it **recommends** that satellite tracking should continue. [SC/65a]

Southern Hemisphere humpback whales [Agenda item 10.2 both in SC/65a and SC/65b]

Assessment of Breeding Stocks D, E and F

The Committee **recommends** additional sampling in remote areas (nine islands in eastern French Polynesia's Tuamotu and Gambier Islands) of the South Pacific from which few data are available. [SC/65a]

The Committee recognised [for BSD] that any abundance measurement method that could provide a lower bound to prior (i.e. a value other than zero) would be useful in improving future model fits to BSD, and **recommends** that analyses to achieve this be attempted. [SC/65a]

With respect to model fits to Oceania in SC/65a/SH01, the Committee **recommends** replacing the photo-id mark-recapture data with genetic mark-recapture data. [SC/65a]

In conclusion, the Committee **strongly agrees** that the assessment of breeding stocks D, E and F should be completed at next year's meeting (i.e. 2014). The following final **recommendations** were made to complete this work [SC/65a]:

(1) a lower bound on the BSD abundance estimate should be obtained;
(2) a single-stock model for BSD will be run for a range of choices of the Antarctic feeding ground catches between 120°E and 150°E;

[6]International Whaling Commission. 2013. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 14: 1-86.

(3) two stock BSE1-Oceania models (with further breeding stock division within Oceania) will be explored; and
(4) if time permits after sufficient exploration of the models above, more complex options may be examined. These could include a three-stock model covering all of BSD, BSE1 and Oceania, together perhaps with more complex models for the dynamics of BSD, as discussed above.

The posterior median estimate of population status in 2012 relative to pre-exploitation abundance suggests that BSD is approaching pre-exploitation levels (90%, 90% probability interval (PI): 74-98%). However, the results are somewhat sensitive to the lower bound on BSD absolute abundance estimates for 2008, with greater abundance resulting in a slightly greater level of recovery. Given that the available lower bound estimate was preliminary, the Committee **recommends** future work to further refine that value. [SC/65b]

There was an inconsistency between the high latitude catch allocations that fit the model best and the mixing proportions of breeding stocks in the Antarctic as suggested from genetic data. For the future, the Committee **recommends** further examination of available genetic data, assumptions and analytical approaches, as described in detail in Annex H, item 3.1.4. [SC/65b]

In conclusion, the Committee **agrees** that its assessment of breeding stocks BSD/BSE1/BSO had been completed. It acknowledges the efforts of all those who helped to bring the assessment to a conclusion. This also concludes the Comprehensive Assessment of Southern Hemisphere humpback whales.

Noting that this circumpolar assessment took eight years to complete, the Committee **recommends** that assessment results for all Southern Hemisphere breeding stocks be compiled and synthesised for discussion next year. [SC/65b]

The Committee **recommends** a thorough synthesis of assessment results and unresolved questions for discussion in SC/66a. [SC/65b]

The Committee further **recommends** that focus on the planning of the future direction of the Sub-committee on Other Southern Hemisphere Whale Stocks is given next year. Topics would include the feasibility of conducting assessments of other Southern Hemisphere species and consideration of future assessments of humpback whales. [SC/65b]

As a foundation, a literature review is **recommended** to identify all new information produced on Southern Hemisphere humpback whales since the Comprehensive Assessment began in 2006. [SC/65b]

The Committee **recognises** the long-term value of photo-identification catalogues to support future assessments and **recommends** that work continue on the Antarctic Humpback Whale Catalogue. [SC/65b]

Consideration was also given to the importance of evaluating data needs to better inform future assessments. A modelling exercise is **recommended** as one means of informing this question. [SC/65b]

Work is also **recommended** to address questions arising specifically from the assessment of BSD/BSE1/BSO. These included work to evaluate: (1) the available genetic data, assumptions and analytical approaches for establishing mixing proportions of breeding stocks in the Antarctic; and (2) the minimum abundance of BSD, which is only currently available as a preliminary value, but important to the interpretation of assessment results. [SC/65b]

The Committee recognises the contribution of the AHWC to humpback whales studies in the Southern Hemisphere and **recommends** its continuation. [SC/65a]

Southern Hemisphere blue whales [Agenda item 10.2 both in SC/65a and SC/65b]

Antarctic blue whales

The Committee … **highlighted** the success of the SORP Antarctic Blue Whale Project to date and the significant advance it represents in non-lethal research on blue whales in the Southern Ocean.

The Committee **thanks** the authors [incorporation of JARPA blue whale photographs into the catalogue] and **recognises** the contribution of this on-going work. It also **recommends** that blue whale research be prioritised in upcoming Japanese Southern Ocean sighting cruises. [SC/65a]

The Committee **recommends** that the 380 additional JARPA II blue whale photographs be compared to the ABWC. [SC/65a]

The Committee **welcomes** this analysis [IDCR/SOWER blue whale mark-recapture], which provides the first abundance estimates of Antarctic blue whales since Branch (2007)[7]. It **agrees** that the authors be invited to the Scientific Committee in the future to discuss this work.

Pygmy blue whales

The Committee **recommends** work to clarify the population identity of blue whales observed off New Zealand, noting that the relationship among pygmy blue whales in different areas of the Southern Hemisphere continues to be unclear and merits further investigation. [SC/65b]

Migratory movements of 11 pygmy blue whales between Australia and Indonesia as revealed by satellite telemetry were reported (Double *et al.*, 2014[8]). The Committee notes these results on migratory movements with interest and **recommends** the continuation of this work. [SC/65b]

North Pacific sei whale in-depth assessment [Agenda items 10.4 in SC/65a and 10.5 in SC/65b]

Given the abundance data from POWER and JARPN II, completed catch history, historical abundance data listed in IWC (2013)[9] and results expected from the genetic studies, the Committee **agrees** that it can proceed with the In-depth Assessment for sei whales. The Committee **requests** that the POWER data continue to be validated by the Secretariat in the usual way. [SC/65b]

In discussion on the uncertain stock origins of sei whales represented by 71 products purchased in Japanese market from 1997-2009, the Committee **concludes** that the possibility that the market samples reflected additional, previously undetected, genetic diversity within the North Pacific could not be ruled out at this stage and the Committee **recommends** a direct comparison between market and JARPN II samples to: (a) reconstruct phylogenetic relationships; (b) determine if there are significant difference between the market samples and the JARPN II samples; and (c) investigate the levels of genetic diversity and the factors explaining possible differences. [SC/65b]

[7]Branch, T.A. 2007. Abundance of Antarctic blue whales south of 60°S from three complete circumpolar sets of surveys. *J. Cetacean Res. Manage.* 9(3): 253-262.

[8]Double, M.C., Andrews-Goff, V., Jenner, K.C.S., Jenner, M.N. and Laverick, S.M. 2014. Migratory movements of pygmy blue whales (*Balaenoptera musculus brevicauda*) between Australia and Indonesia as revealed by satellite telemetry. *PLoS ONE* 9(4): [e93578. doi:10.1371/journal.pone.0093578] 30pp.

[9]International Whaling Commission. 2013. Report of the Scientific Committee. Annex G. Report of the Sub-Committee on In-Depth Assessments. Appendix 3. List of data sources for use in the North Pacific sei whale in-depth assessment. *J. Cetacean Res. Manage. (Suppl.)* 14: 211-13.

The Committee noted that interpretation of the market samples would be aided by knowledge of the geographical and temporal distribution of purchases and thus **requests** that date and location of purchase be included in the data set to be provided for the above studies. The Committee also identified a need for better elucidation of the world-wide genetic structure of sei whales. [SC/65b]

Since the Committee expected to specify assessment runs at the 2015 Annual Meeting, it **recommends** a proposal (Annex G, Appendix 5) be funded to develop the appropriate population dynamic models and report(s) documenting the models, their structure, the data used for analysis, results and interpretation of the results to be submitted to the 2016 Annual Meeting. [SC/65b]

Gray whales in the western North Pacific [Agenda items 10.5 in SC/65a and 10.6 in SC/65b]

New information

The Committee welcomed papers on photo-identification studies, recognising the importance of long-term monitoring of the animals off Sakhalin. It **strongly recommends** that the studies continue. [SC/65a]

The Committee **welcomes** information on sightings of western gray whales near Japan and **encourages** further analysis of the photographs to confirm that there were two whales and whether it was a mother-calf pair. The Committee **strongly recommends** that these photographs be compared with other photographs of gray whales from throughout the range. [SC/65b]

Although recognising some of the difficulties of sharing data, the Committee again **recommends** that the two programmes off Sakhalin should make every effort to collaborate, especially in sharing photographs and other data. [SC/65b]

Oil and gas activities are increasing near Sakhalin and the Committee **recommends** that other operators should be involved in studies and monitoring of western gray whales and follow the best mitigation practices to ensure protection of these whales and their habitats off Sakhalin Island. [SC/65b]

The Committee **expresses concern** about the possibility of the development of a salmon trap net fishery in the feeding areas of western gray whales off Sakhalin. The Committee **recommends** that the Russian Federation and local Sakhalin authorities prohibit trap net fishing on the gray whale feeding grounds in the future. [SC/65b]

The Committee also received information about *Exxon Neftegaz Limited's* proposed development of a temporary facility to be situated on the eastern shore of Sakhalin Island for the unloading of various modules for oil and gas activities. It **expresses serious concern** over this proposed development project and its possible immediate and cumulative impacts on gray whales, their feeding habitat and prey. The Committee **requests** additional information on the proposed project and **urges** the Government of the Russian Federation to take steps to ensure the maintenance of Piltun Lagoon. [SC/65b]

Conservation advice

The Committee **welcomes** the efforts of Japan with respect to the conservation and research on gray whales and **encourages** those efforts to continue.

The Committee **acknowledges** and **welcomes** the important work of the IUCN WGWAP (Western Gray Whale Advisory Panel) as reflected in the updated report provided to this meeting and **encourages** its continuation.

As previously, the Committee again **recommends** that oil and gas development activities (including seismic surveys and on- or near-shore development) in areas adjacent to or used by gray whales be undertaken only after careful planning for mitigation and monitoring.

Southern Hemisphere right whales [Agenda items 10.6 in SC/65a and 10.7 in SC/65b]

The Committee **expresses** concern over the continued large annual mortality of calves at Península Valdés, and its potential significance to the population. It **recommends** that investigation of the causes of this mortality, including the hypothesis that gull attacks are contributing to calf deaths, should continue as a matter of priority and **recommends** that strategies and actions to reduce the risk of gull attacks on southern right whales at Península Valdés should be further developed and implemented. The Committee **commends** the SRWHMP for their hard work and diligence in trying to resolve this situation and **encourages** continuation and further support of this important work. [SC/65a]

The Committee **expresses concern** over the high calf mortality reported in this population and **recommends** that the Southern Right Whale Health Monitoring Programme continue as a high priority under the Conservation Management Plan. [SC/65b]

It also **recommends** that information on the gull control programme is reported to the IWC Workshop to be held in Puerto Madryn, Chubut in August 2014. [SC/65b]

The Committee **welcomes** information on strandings and sightings and, in light of this critically endangered status and the importance of this area [Isla de Chiloe] for the recovery of the population, it **strongly recommends** relocation of the wind farm project away from shore, and **reiterates** the need for the urgent development of an environmental impact assessment that considers possible impacts on cetacean habitats. [SC/65a]

North Atlantic right whales [Agenda items 10.7 in SC/65a and 10.8 in SC/65b]

The Committee **repeats** its concern over North Atlantic right whale stocks and notes that it is a matter of urgency that every effort be made to reduce anthropogenic mortality. Some updated information on the status was provided to 2014 Annual Meeting upon request at the previous year's meeting.

North Pacific right whales [Agenda items 10.8 in SC/65a and 10.9 in SC/65b]

The Committee **reiterates** its previous concern over the status of this endangered species throughout the North Pacific. The Committee also welcomed new information of sightings of North Pacific right whales.

The Committee **recommends** that the survey data on North Pacific right whales (including search effort, sightings, photo-id and biopsy results) be synthesised and presented by Matsuoka and colleagues to next year's meeting. [SC/65a]

Upon the request above, the sighting summary of North Pacific right whale collected by JARPN and JARPN II from 1994-2013 was reported. The Committee **welcomes** this information. The Committee **recommends** that a photo-id catalogue be established as soon as possible to compare with existing photographs from the Okhotsk Sea, eastern Bering Sea and other western North Pacific photos held by Japanese and Russian researchers. [SC/65b]

In addition, the Committee **recommends** that Japanese scientists prepare abundance estimates for right whales in the Okhotsk Sea and off the Kamchatka Peninsula. [SC/65b]

North Atlantic bowhead whales [Agenda items 10.9 in SC/65a and 10.10 in SC/65b]
The Committee **welcomes** information on helicopter surveys and land-based observations conducted by the National Park 'Russian Arctic' and Russian Geographic Society, and it **encourages** its continuation and looks forward to further updates. [SC/65b]

Okhotsk Sea bowhead whales [Agenda items 10.10 in SC/65a and 10.11 in SC/65b]
In discussion, the Committee **commends** Shpak and colleagues for their excellent work [in Ulbansky Bay in the Okhotsk Sea] It **strongly encourages** further research on this small and little-studied stock. [SC/65a]

The Committee **recommends** collaboration of genetic laboratories to allow analysis of all available genetic samples for a population estimate. [SC/65b]

Arabian Sea humpback whales [Agenda items 10.11 in SC/65a and 10.12 in SC/65b]
Some recent information on a discrete and non-migratory population of humpback whales in the Arabian Sea was reported. Information was also provided on progress toward the regional conservation initiative. The Committee welcomed these important updates on the Arabian Sea humpback whale population. Given the critical status of this population, it **recommends** that this research be allocated a high priority. [SC/65a]

In discussion that results of recent satellite tag assessment studies on the health of animals will be available in the next few years. However, the Committee also recognised the potential benefit to the conservation management of this critically endangered population. The Committee **recommends** that this work be undertaken as a high priority. An important caveat is that any untested tag modifications should be evaluated on other populations and not used first on Arabian Sea humpbacks. [SC/65a]

The Committee **welcomes** efforts to develop regional cooperation for research and capacity, and it **recommends** the following priority tasks; genetic analysis of existing biopsy samples, field survey training, and preliminary surveys in the Gulf of Kutch on the Pakistan-India border. [SC/65b]

The Committee **reiterates** its serious concern about the endangered status and threats facing this distinct population. A regionally coordinated conservation and research program is **strongly recommended** and the Committee urges the IWC and range states to consider the nomination of the Arabian Sea humpback whale for a CMP, given the benefits that a regional framework would provide. The Committee also suggests that the issue be reviewed by the Conservation Committee, with the continued support of the intersessional Arabian Sea working group. [SC/65b]

The Committee **recommends** a combination of exploratory surveys and molecular genetics for the Arabian Sea population, as well as the following planned work: (1) the continuation of satellite tagging of humpback whales off Oman; (2) an intersessional workshop in 2014 to facilitate research capacity building, prioritisation of research in potential hotspots and further assessment of escalating threats; and (3) continuation of the Arabian Sea Working Group. [SC/65b]

International cruises [Agenda items 10.12 in SC/65a and 10.13 in SC/65b]
IWC-POWER cruises in the North Pacific and IWC-SOWER cruises in the Antarctic
Although the research programme is designed by the Committee, the Committee **acknowledges** the tremendous support of the Government of Japan who provide a vessel and crew for 60-days each year – this is tremendous in-kind support without which the programme could not take place. The Committee **agrees** that the surveys were duly conducted following the guidelines of the Committee. [SC/65b]

The Committee **welcomes** news that the photographic data had been uploaded into the IWC Secretariat's Lightroom database and **recommends** continuation of this work. [SC/65b]

On receiving 2014 survey plans, the Committee **recommends** that permission be sought to operate in the US EEZ far enough in advance for the 2014 cruise. The Committee drew particular attention to the satisfactory resolution of a long-standing problem involving CITES permits. It **expresses** thanks for this satisfactory outcome to the US State Department and the US Embassy in Tokyo, to Brownell, and to Sakamoto (Japanese Fisheries Agency), the latter in particular for their persistence in reaching this result. [SC/65a]

The Committee **welcomes** the processing of valuable IWC-SOWER sonobuoy data. Now that the 'bio duck' sound has been positively identified as an Antarctic minke whale, the Committee **recommends** this database be interrogated to identify the bio duck sound to investigate the spatial temporal distribution of the Antarctic minke whale. [SC/65b]

Japanese cetacean sighting surveys in the Antarctic
In discussion on the plan of the Antarctic surveys, the Committee recognised the difficulty of fully reviewing a proposal without detailed design information, but noted that this seems unavoidable given security considerations The Committee broadly **endorses** the proposal, **recommending** that the proposed trackline design be changed if a survey of the Ross Sea was actually able to proceed. [SC/65a]

Sperm whales [Agenda item 10.14 in SC/65b]
Upon the recommendation in 2013 Annual Meeting, the Committee **recommended** that a dedicated agenda item be added for this species for 2014 meeting.

11. STOCK DEFINITION

Guidelines for DNA data quality and genetic analyses [Agenda items 11.1 both in SC/65a and SC/65b]
The Committee … **welcomes** the developments in epigenetic ageing methods. [SC/65b]

Statistical and genetic issues related to stock definition [Agenda items 11.2 both in SC/65a and SC/65b]
The Committee **encourages** the continuation of developing genetic mark-recapture methodology and further reporting to the 2015 Annual Meeting. The Committee also **expresses** strong appreciation for these efforts to combine allozyme and microsatellite datasets together for a locus-specific reanalysis. [SC/65b]

The Committee **requests** that the authors of this study [a meta-analysis of microsatellite diversity and standardised $F_{ST]}$ provide the data used in the meta-analysis be made available to the SDWG so that it can better understand the results. [SC/65b]

Testing of Spatial Structure Models (TOSSM) [Agenda items 11.3 both in SC/65a and SC/65b]
The Committee also **agrees** to form an intersessional email group to further advance the use of TOSSM, with the primary intent that TOSSM be used to provide general guidelines for

setting sub-area boundaries for assessment processes, with particular reference to populations that pose management challenges to the Committee. [SC/65b]

12. ENVIRONMENTAL CONCERNS [ITEM 12 IN BOTH REPORTS]

12.2 Pollution [Agenda items 12.2 both in SC/65a and SC/65b]

POLLUTION 2000+ and POLLUTION 2020

At 2013 Annual Meeting, the Committee **commends** the progress on Pollution 2000+ Phase III objectives and **strongly supports** its continued work to further develop the necessary tools to assess cetacean pollutant exposure risk. The Committee **agrees** to the Pollution 2020 framework plan. [SC/65a]

The Committee **commends** this work [completion of Phases II and III of the Pollution 2000+ initiative] and recognises that the development of a practical modelling tool provides an important step in the Committee's ability to quantify the effects of chronic threats to cetaceans. [SC/65b]

The Committee **endorses** the steering committee advice and **recommends** the addition of leachate and adsorbed chemicals from microplastics to the questionnaire that will be circulated among experts for input on chemicals of concern. In addition, the Committee **recognises** that continued investigation into the effects of chemicals adsorbed to microplastics, on cetaceans, is needed. [SC/65b]

Oil spill impacts

The Committee **commends** this work and **recommends** that these studies [related to the Deepwater Horizon spill] continue. [SC/65b]

The Committee also **recommends:** [SC/65b]

(1) that baseline data from populations at risk be collected and knowledge about exposure and impacts following spill events maximised;
(2) that analytical methods for oil spill-related compounds be standardised; and
(3) that pre-planning begin for an oil spill workshop to inform the Committee on the impacts of oil, dispersants, and spill response on cetaceans and the methodological tools for the assessment of impacts to cetaceans after a spill.

The Committee **expresses great concern** about the continued high number of dolphin strandings in 2013. The Committee welcomes the new information on marine mammal studies in the Gulf of Mexico and **encourages** scientists to provide restoration ideas for cetaceans to NOAA. [SC/65a]

The Committee **reiterates** its previous conclusion[10] that a review of the capacity for oil spill response in the Arctic was an urgent priority in the aftermath of the Deepwater Horizon oil spill. The Committee **concludes** that it would be useful to know more about the current capacities and mechanisms of oil spill recovery. [SC/65a]

Given the amount of activity occurring related to oil spill preparedness and the fact that oil spill preparedness and response plans are being developed, the Committee **recommends** an increased exchange of information between the IWC Secretariat and the Arctic Council's Emergency Prevention, Preparedness, and Response Working Group (EPPR-WG). [SC/65a]

[10]International Whaling Commission. 2011. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 12: 1-75.

The Committee again **stresses** the importance of baseline information on both marine mammals (and other wildlife) and their prey. It was noted that the injury assessment process is difficult to complete without this type of data available for comparisons. In addition, the Committee **recognises** the importance of subsistence species to local communities. [SC/65b]

Further to discussions about oil spills, the Committee **agrees** that absolute priority should be given to preventing oil spills in the highly vulnerable Arctic region. [SC/65b]

The Committee **recommends** that Committee members: (1) enhance the collection of baseline data related to abundance, health assessments, prey, and habitat of cetaceans for an improved capacity for injury assessment and monitoring recovery in the event of a spill; and (2) build capacity for responding to an oil spill in polar regions or other vulnerable or at risk areas. [SC/65b]

The Committee also **recommends** that the Commission seeks observer status at the Arctic Council for improved communication and coordination of Arctic issues related to cetaceans, including issues related to shipping oil and gas activities (and see Item 10.2.1 and Item 7.2.2 of SC/65b report). [SC/65b]

In response to the statement in Resolution 2012-1 encouraging the World Health Organization (WHO) to conduct reviews of recent scientific publications regarding contaminants in certain cetacean products and give updated advice for consumers, the Committee **recommends** that the Secretariat reinitiate discussions with the WHO as a preliminary step, to ensure that they are in need of this information and would be willing to receive it, prior to moving forward on this Item. [SC/65a]

The Committee **commends** the recent advances in methods for non-lethal sampling, noting that information on stress physiology, reproductive status, nutritional status, immune response, health and disease are valuable to health assessment efforts. The Committee **endorses** this work and **strongly recommends** further development and improvement of these methodologies. The Committee **commends** the application of such techniques to the gray whales feeding off of Sakhalin Island, Russia. [SC/65a]

An update on the 2011 Fukushima Nuclear Accident was provided. Modelling efforts have projected the input of Fukushima-associated radionuclides into marine waters of eastern North Pacific and the levels in some areas could approach those reported in the 1950-60s, i.e., a period during nuclear testing and activity in the region. The Committee **expresses** concern about this new information; the impact that radionuclides released as a result of the Fukushima accident might have on wildlife and humans remains unclear. [SC/65b]

12.3 CERD (Cetacean Emerging and Resurging Disease) [Agenda items 12.3 both in SC/65a and SC/65b]

The Committee discussed: (1) CERD website and work plan; (2) strandings and mortality events; and (3) other health-related activities. In particular, the following recommendation are made:

Regarding an atypical mass stranding of 6-10 Cuvier's beaked whales occurred along the coasts of south and southwest Crete, Greece, Mediterranean Sea, the Committee **recommends** that this event be investigated by marine mammal veterinarians and the findings reported next year.

Regarding the evaluation of marine *Brucella* infections in cetaceans in the United States, the Committee **recommends** that the development of a reliable serological assay for

the detection of marine *Brucella* antibodies be given high priority. It also **recommends** further research into virulence mechanisms, transmission pathways, pathogenesis and co-morbidity factors in cetaceans. The Committee **recognises** and **encourages** the work on *Brucella* in the Southern Hemisphere and welcomes initiatives that would allow cetacean *Brucella* types to be identified and compared. In addition the Committee **recognises** the concern about the potential risk that the marine types may pose to humans, including stranding response workers, subsistence consumers and fishermen, and **recommends** that particular attention be given to elucidating the frequency and routes of transmission of the marine *Brucellas* to humans. [SC/65a]

The Committee received information on skin lesions in southern right whales from the Península Valdés area. The Committee **commends** Argentina for conducting skin lesion research on Southern right whales, especially the recent investigations of pathogens that may be expressed in the lesions and **recommends** that they continue the work on skin lesions given the prevalence and continued problems with kelp gulls. [SC/65b]

Anthropogenic sound [Agenda items 12.4 both in SC/65a and SC/65b]

The Committee **commends** the IWC/IQOE workshop participants for their efforts, and **recommends** continuation of this effort and further work to implement the recommendations contained in the workshop report. [SC/65b]

The Committee **endorses** the recommendations from the workshop report. In order to advance this work, the Committee **recommends** conducting the two predictive sound field mapping studies in high priority areas as described in Annex K, Appendix 2. [SC/65b]

In addition, the Committee **recommends** the collection of empirical data (e.g. acoustic recordings) to assess baseline acoustic conditions in these high priority regions (particularly where rapid industrial or environmental change is occurring), and the expansion of efforts where data collection is currently limited. [SC/65b]

The Committee **recommends** continued international collaboration on the issue of underwater anthropogenic sound, and planning of additional workshops or projects with various regional management agencies, industry, and organisations. [SC/65b]

The Committee received new information on: (1) the effects of anthropogenic sound on cetaceans; and (2) new tools and approaches to mitigate effects of anthropogenic sound on cetaceans. The Committee **encourages** time/area closures and the development of new quieting technologies to address noise pollution. The Committee **encourages** further scientific investigations to better understand the effects of sound on cetaceans and their habitats and to better understand the effectiveness of mitigation measures. [SC/65a]

In examination of Environmental Impact Statements or Reports under the US Marine Mammal Protection Act, it was considered that more animals are affected by noise, and as such the impacts to cetaceans are greater, than currently estimated. The Committee **recommends** that further consideration should be given to examining behavioural effects and possible population level effects. [SC/65b]

The Committee welcomed a German study about the development of noise mitigation measures in offshore wind farm construction and it **stresses** the importance of sound mitigation measures. With respect to the Baltic Sea, the Committee **strongly encourages** the relevant governments in the area to apply appropriate measures to protect the highly endangered harbour porpoise subpopulation of the Baltic proper from negative effects of underwater noise through pile driving and other anthropogenic activities. In recognising the pervasive nature of underwater sound in the marine environment and the inherent difficulties in assessing the behavioural impacts that such inputs may cause, the Committee **agrees** that increased efforts should be made to avoid, minimise and mitigate the adverse effects of anthropogenic noise on cetaceans. [SC/65b]

In particular the Committee **recommends** that Governments should promote and facilitate the adoption of noise-reducing technologies by industry including shipping noise, exploration for fossil fuels and pile-driving. The Committee also **encourages** the completion of appropriate assessments for marine activities to help ensure harm is not caused to cetaceans. The Committee also **encourages** industry (and other noise producers such as the military) to release data about its noise generating activities (both completed and where possible, planned), including but not limited to activity, location, source characteristics, duration, in order that the cumulative implications for cetaceans of all activities can be assessed. [SC/65b]

The Committee **recommends** the process described in Nowacek *et al.* (2013)[11] which deals with a responsible approach to minimising disturbance to cetaceans from seismic surveys. It also **endorses** the approaches described in the other papers presented in this section. [SC/65b]

The Committee drew attention to the fact that this is a new sound source to be associated with cetacean mass strandings and **recommends** that high intensity multi-beam echosounder systems be considered in addition to military sonars as possible threats to cetacean populations. [SC/65b]

The Committee **commends** the ACCOBAMS Scientific Committee for addressing the conservation of Cuvier's beaked whales in the Mediterranean through the identification of the species' critical habitat, and **recommends** that efforts to map Cuvier's beaked whales' habitat in the Mediterranean should be continued and improved. [SC/65b]

Impacts of climate change on cetaceans [Agenda items 12.5 both in SC/65a and SC/65b]

The Committee received several papers on this topic and a summary of the 'Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic' (Anchorage, Alaska on 6-7 March, 2014). The Committee **commends** the workshop participants for their work. The Committee **reiterates** that two of its recommendations are independently in accord with those arising out of the Arctic workshop: (1) that the Commission pursue stronger links with other important international organisations (e.g. the Arctic Council, IMO), range states, local authorities and industry; and (2) that IWC member nations enhance the collection of baseline data related to health assessments, prey, and habitat of cetaceans for an improved capacity to detect impacts from or recovery after oil spills or to detect changes due to other human activities. [SC/65b]

Habitat-related issues [Agenda items 12.6 in SC/65a and 12.6-7 in SC/65b]

The Committee **agrees** that information on marine debris ingestion should be included in national Progress Reports

[11]Nowacek, D.P., Bröker, K., Donovan, G., Gailey, G., Racca, R., Reeves, R.R., Vedenev, A.I., Weller, D.W. and Southall, B.L. 2013. Responsible practices for minimizing and monitoring environmental impacts of marine seismic surveys with an emphasis on marine mammals. *Aquat. Mamm.* 39(4): 356-77.

submitted to the IWC. The Committee **recommends** discussions with the *ad hoc* Progress Report group and Secretariat with the aim of adding agreed fields for inclusion of such records in the online submissions portal. [SC/65b]

13. ECOSYSTEM MODELLING

13.1 Review ecosystem modelling efforts undertaken outside the IWC

13.1.1 Modelling of the direct relationship between baleen whale populations and the abundance of their prey

The Committee **concurs** with the authors of the presented studies that the models used in the studies to date are useful for their broad-scale strategic conclusions, but are not yet suitable guides for short-term tactical management decisions. The Committee **agrees** that, in broad terms, the case has been established that forage fisheries are expected to impact predator populations including cetaceans, and considers that the priority for this Group should now be on more detailed models for specific cases involving whales, with more attention being paid to the dynamics, including stochastic factors. The Committee **agrees** that the framework discussed in Item 13.2 is a promising basis for modelling the effect of changes in prey species on whale populations. [SC/65a]

13.1.2 Update from CCAMLR's Ecosystem Monitoring and Management Programme (WG-EMM) on krill and its dependent predators

The Committee held a joint Workshop with CCAMLR in 2008[12]. Since then, the Committee has identified significant knowledge gaps in aspects such as spatial variability and trends in prey species, on the relationships between predators and prey, and on the effects of environmental variability on predators. Given CCAMLR's considerable expertise on these aspects, the Committee **agrees** that the Chair of the Committee should write to CCAMLR in time for the meeting of the WG-EMM in Bremerhaven, Germany, in early July 2013, to discuss how to establish future collaborations. [SC/65b]

13.2 Explore how ecosystem models can contribute to developing scenarios for simulation testing of the RMP

The Committee appointed a correspondence group under de la Mare to develop specific trials for the RMP for one of these issues (characterisation of yield curves for populations in stochastic environments) and **agrees** to make two of the remaining items a high priority for next year: (1) effects of competition, including effects on whales from fisheries on prey species; and (2) observable environmental and population characteristics likely to be indicators of ecosystem effects. [SC/65a]

The Committee **encourages** analyses on these issues and **agrees** to invite outside expertise as needed. [SC/65a]

13.3 Review of other issues relevant to ecosystem modelling within the Committee

13.3.1 Update on Antarctic minke whale body condition analyses

The Committee **reiterates** its recommendations from previous years that the outstanding issues raised at recent meetings should be examined (for details see Annex K1, item 4.1). A number of additional suggestions were also made this year. The Committee **encourages** additional analyses to be undertaken on both the blubber thickness and body fat data and noted that papers should ideally be submitted to the forthcoming JARPA II review Workshop (see Item 17.3). [SC/65a]

13.3.2 Other, if new information is available

The Committee **welcomes** these plans [for conducting ecosystem modelling for baleen whale species in Antarctic Area IV, based on data from the JARPA and JARPA II programs] but suggested that the aims of the modelling exercise be better clarified. [SC/65a]

The Committee **welcomes** these efforts [a multi-species modelling effort to study the role of minke whales in the marine ecosystem around Iceland] and **encourages** further refinements to include the effects of environmental variability on prey species and to incorporate prey switching in the next version. [SC/65a]

14. SMALL CETACEANS

14.1 Review current status of selected populations of small cetaceans in East Asian Waters [China (including Taiwan), Korea, Japan and Russia (white whales only)] [Agenda item 14.1 in SC/65a]

Narrow-ridged finless porpoise (Neophocaena asiaeorientalis) [Agenda item 14.1.1. in SC/65a]

The Committee **endorses** the updating of the IWC list of recognised species (see Item 20).

The Committee **agrees** that these results confirmed previous ecological, morphological and molecular studies showing that there are at least five separate local populations of finless porpoises in Japanese waters that should be treated as different management units.

Bycatch: Republic of Korea [Agenda item 14.1.1.2 in SC/65a]

The Committee **appreciates** the valuable information on finless porpoise bycatch provided by the Korean scientists. It **encourages** researchers and managers to continue their efforts to improve reporting and investigate ways to assess and manage the bycatch, particularly given the uncertainty regarding sustainability. The Committee **recommends** that an analysis be conducted to estimate past bycatches of finless porpoises using data on historical and recent fishing effort together with recently documented bycatch levels. It further **recommends** that available abundance data on finless porpoises in Korean waters be summarised for consideration at next year's meeting together with bycatch data to allow a better evaluation by area. The Committee **commends** the Korean authorities for their efforts to reduce this bycatch and **requests** that a report summarising progress on bycatch mitigation measures be submitted next year.

Populations of Tursiops aduncus in Korean and Japanese waters [Agenda item 14.1.2 in SC/65a]

The Committee **notes with concern** an apparently serious bycatch problem around Amakusa-Shimoshima Island. It **recommends** that this problem is monitored closely and that efforts are made to reduce bycatches. [Agenda item 14.1.2.1 in SC/65a]

The Committee **agrees** that it is important to understand the origins and routes of spreading of this disease and **recommends** further investigation and continued close monitoring of the population around Amakusa-Shimoshima Island in western Kyushu. [Agenda item 14.1.2.1 in SC/65a]

[12]International Whaling Commission and CCAMLR. 2010. Report of the Joint CCAMLR-IWC Workshop to Review Input Data for Antarctic Marine Ecosystem Models, 11-15 August 2008, Hobart, Australia. *J. Cetacean Res. Manage. (Suppl.)* 11(2): 541-86.

The Committee thanked H-W Kim and colleagues for providing information on the small local population of bottlenose dolphins around Jeju. It **encourages** their work to continue and **requests** updates on this including the satellite-tagged released animals and efforts to release dolphins in fishing gear. [Agenda item 14.1.2.2 in SC/65a]

Short-finned pilot whales (Globicephala macrorhynchus) in Japan [Agenda item 14.1.3 in SC/65a]
In the absence of new information, the Committee **recalls** its previous concerns regarding these stocks (IWC, 1987[13], 1992[14]). A **recommendation** relating to catches of small cetaceans by Japan (including this species) is given under Item 14.4.1 [SC/65a].

Dall's porpoise (Phocoenoides dalli) [Agenda item 14.1.4 in SC/65a]
The Committee notes that abundance estimates are now ten years old and catch limits are still probably unsustainable (Wade *et al.*, 2008[15]). The Committee **reiterates** its previous concerns (IWC, 2002a, pp.57-58[16]; 2008a, p.51[17]). A **recommendation** relating to catches of small cetaceans by Japan including this species is given under Item 14.4.1 [SC/65a].

White whales of the Okhotsk Sea [Agenda item 14.1.5 in SC/65a and 14.4.4 in SC/65b]
Given this, the Committee **recommends** that the live-capture quota for the North-Okhotsk subzone be reduced to a level that is consistent with available scientific data and that at least four summer aggregations in the North-Okhotsk subzone should be managed separately such that the total allowable quota is broken down into separate quotas for Sakhalin-Amur, Ulbansky Bay, Tugursky Bay and Udskaya Bay (a fifth aggregation, in Nikolaya Bay, should have a zero quota as the number of animals using that bay is very small; SC/65a/SM23). [SC/65a]

The Committee further **recommends** that no removals are authorised for the West-Kamchatka subzones, until sufficiently rigorous analyses of sustainability are provided that are at least as rigorous to those currently available for the North-Okhotsk subzone. [SC/65a]

Last year (IWC, 2014c[18]), the Committee **agreed** that the current management scheme for live-capture of belugas in the Sea of Okhotsk was very likely to lead to unsustainable levels of removals, placing at least the Sakhalin-Amur summer aggregation in Sakhalinsky Bay at high risk of depletion. [SC/65b]

The Committee **expresses strong concern** given the estimated PBR of 42, that the removal of 81 living belugas, with an additional 12 confirmed and over 30 suspected deaths in summer of 2013, is unsustainable for this local summer aggregation and **reiterates** that removals should be reduced to at least a level that is consistent with available scientific data and that the four summer aggregations in the North-Okhotsk subzone should be managed separately through separate quotas for Sakhalin-Amur region, Ulbansky Bay, Tugursky Bay and Udskaya Bay (IWC, 2014c[18]). [SC/65b]

The Committee also **supports** the continuation of the beluga research projects conducted by the A.N. Severtsov Institute and the Marine Mammal Council and **recommends** expanding research efforts into all areas of potential beluga removals. [SC/65b]

Review of status of small cetaceans in the eastern Mediterranean and Red seas [Agenda item 14.1 in SC/65b]
The Committee **recommends** that monitoring programmes in the Adriatic Sea should be coordinated among the neighbouring countries to enable regular basin-wide surveys of populations and monitoring of threats especially within the mandatory activities needed under the EU Marine Strategy Framework Directive (Directive 2008/56/EC). The Committee also **recommends** that ongoing studies in the region, particularly in offshore areas of the southern Adriatic, be continued (e.g. to improve the knowledge on beaked whale).

Aegean Sea [Agenda item 14.1.2 in SC/65b]
Explosives are still used illegally to fish and the Committee **expresses concern** and **requests** the Greek authorities to stop the illegal use of explosives.

The Committee **endorses** the recommendation from local scientists that Turkey develops a Conservation Action plan for small cetacean species in its waters which incorporates public awareness as well as research elements.

Libyan waters [Agenda item 14.1.3 in SC/65b]
The Committee **encourages** relevant authorities in Libya to more strictly regulate fisheries and stop the illegal use of explosives.

Levantine Basin [Agenda item 14.1.4 in SC/65b]
The Committee **thanks** Kerem and his colleagues for information on a poorly known region and **encourages** publication as soon as practicable. It also **recommends** that: (1) that a preliminary analysis to define the amount of effort needed to obtain robust abundance and distribution data in Israeli waters be conducted; and (2) that Israel develop Conservation Action plans for small cetacean species incorporating scientific elements and public awareness.

General recommendations for the eastern Mediterranean [Agenda item 14.1.5 in SC/65b]
Noting the various threats identified for small cetaceans in the eastern Mediterranean region, the Committee **recommends** that further research be conducted to investigate their effects on the long-term viability of populations. Specifically the Committee **reiterates its previous recommendations** that the large-scale survey known as the 'ACCOBAMS Survey Initiative' be carried out as soon as possible in order to obtain information on cetacean distribution and abundance for the whole Mediterranean, including the eastern sub-region.

It also **recommends** that:

(1) systematic sub-regional surveys be implemented;
(2) research be undertaken to define management units, at least for the most common species (e.g. the common bottlenose dolphin and the striped dolphin), through multidisciplinary approaches (including genetics, isotopes, biomarkers and photo-identification) to evaluate the effects of anthropogenic mortality (e.g. bycatch) at population level;

[13]International Whaling Commission. 1987. Report of the sub-committee on small cetaceans. *Rep. Int. Whal. Comm.* 37:121-28.
[14]International Whaling Commission. 1992. Report of the Scientific Committee. Annex G. Report of the Sub-Committee on Small Cetaceans. *Rep. Int. Whal. Comm.* 42:178-234.
[15]Wade, P.R., Bass, C.L. and Kasuya, T. 2008. A comparison of methods for calculating thresholds for evaluating levels of catch of Japan's Dall's porpoise (*Phocoenoides dalli*) hand-harpoon hunt. Paper SC/60/SM24 presented to the IWC Scientific Committee, June 2008, Santiago, Chile (unpublished). 8pp. [Paper available from the Office of this Journal].
[16]International Whaling Commission. 2002. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 4:1-78.
[17]International Whaling Commission. 2008. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 10:1-74.
[18]International Whaling Commission. 2014. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 15:345-79.

(3) the nature and extent of cetacean-fisheries interactions (including bycatch, depredation and competition/overfishing) be investigated. This could include enlarging the scope of existing fishery monitoring programmes (e.g. by collecting data on cetaceans bycatch and other interactions on a regular basis), including those for IUU (illegal, unreported and unregulated) fisheries;
(4) research be conducted on the extent and effects of oil- and gas-related activities;
(5) cooperative research with oil and gas industries be developed for sharing information on cetacean distribution and to develop models to identify areas of high density or high importance to small cetaceans;
(6) conduct research on the effects of boat traffic on small cetacean local populations, especially in harbours and other areas of high activity and potential overlap;
(7) a research project be developed in the eastern Mediterranean Sea to gather data on rough-toothed dolphins in order to assess their degree of isolation and their conservation status under IUCN criteria. This assessment should make use of existing acoustic and genetic data;
(8) regional cooperation on science and policy for conserving/managing shared populations/species (e.g. common research/monitoring programmes, common mitigation actions) should be implemented (e.g. in the Adriatic Sea under the Marine Strategy Framework Directive); and
(9) capacity building actions should be implemented (university, local authorities) throughout the region.

Review of status of small cetaceans in the Red Sea [Agenda item 14.2 in SC/65b]
The Committee **agrees** on the importance of gathering additional detailed information on the distribution and abundance of cetaceans, particularly in the least known portions of the region (e.g. Gulf of Suez, waters of Saudi Arabia, Sudan, Eritrea and Yemen), and promoting regulation of dolphin watching in Egypt.

The Committee **encourages** the authors to publish their review in a peer-reviewed journal as soon as practicable.

Report on the Voluntary Fund for Small Cetacean Conservation Research [Agenda item 14.2 in SC/65a and 14.3 in SC/65b]
In accordance with the agreed procedure, the Review Group (Bjørge, Donovan, Fortuna, Gales, Reeves, Rojas-Bracho) recommended five projects from this year's call for proposals (Table 4). The Committee **endorses** these five projects. [SC/65a].

Given the large number of requests and the limited funding available, for future calls for proposals the Review group had recommend that priority is given to projects with clear potential for effective conservation outcomes in areas of particular need (e.g. critical conservation problem known or suspected, but not likely to be addressed without support). The Committee **agrees** with this recommendation. [SC/65a]

The Committee **recognises** the importance of this fund and the work being accomplished and **welcomes** the most recent voluntary contributions received after the last Commission meeting in Panama (June 2012) by Italy (£12,300), the Netherlands (£19,324), the United Kingdom (£30,000), the USA (£6,320), Italian National Institute for Environmental Protection and Research (£12,132), Oceancare (£998), World Society for Protection of Animals (£3,000) and World Wildlife Fund (£1,295). [SC/65b]

Progress on previous recommendations [Agenda item 14.3 in SC/65a and 14.4 in SC/65b]
Vaquita [Agenda item 14.3.1 in SC/65a and 14.4.1 in SC/65b]
The Committee **commends** the Government of Mexico for establishing the Advisory Commission to the Presidency of Mexico for the Recovery of Vaquita and for the final approval of the Mexican Official Standard NOM-002-PESC. [SC/65a]

In light of the significance of this updated estimate, the Committee **agrees** to include the full analysis as an appendix to its report (Annex L, Appendix 3, SC/65a). The Committee **notes with great concern** the model's prediction that if the status quo is maintained, the species population will continue to decline towards extinction. [SC/65a]

It is a recurring problem that the rarer a species is, the harder it becomes to collect sufficient sightings to generate robust abundance estimates and detect population declines. As a result, the Committee **strongly endorses** the decision to embed empirical estimates of vaquita abundance and trends (such as in this case the acoustic monitoring data) into rigorous statistical models, using all available relevant data and information to predict population trajectories. The Committee **expresses** confidence that the best estimate of vaquita abundance in 2013 is **189 individuals** (Annex L, Appendix 3). [SC/65a]

In addition, the Committee **reiterates its previous recommendations** that further actions to eliminate bycatch should **not** be delayed in favour of efforts to collect more population survey data. [SC/65a]

The Committee **reiterates** that the situation for the vaquita is extremely grave and is especially exacerbated by the totoaba fishery. It **expresses grave concern** that the resurgence of illegal totoaba fishing with large mesh gill nets is driving the vaquita more rapidly toward extinction. The Committee **supports** the actions taken and recommendations made by the CAP at its Fourth Meeting and **recognises and commends** the efforts being made by the Mexican Government to combat the illegal fishing of totoaba. [SC/65b]

Recalling Committee recommendations from 1991, the Committee **recommends** that further action be taken to stop vaquita entanglement by fully enforcing the closure of the totoaba fishery and that immediate action be taken to stop the illegal shipment of totoaba across the US border. [SC/65b]

The Committee **recommends** that the Governments of Mexico and the United States consult on this continuing illegal international trade in CITES Appendix I totoaba and, as necessary, raise it to CITES and its Party government to highlight the effect of this trade in causing additional losses of the critically endangered vaquita, with the goal of enhancing enforcement efforts and awareness. [SC/65b]

The Committee **emphasises** that immediate implementation by the Government of Mexico of its strategy to replace gillnets with alternative fishing gear, as required by NOM-002-SAG-PESC-2013, is **extremely urgent**, particularly given the recent major expansion of illegal totoaba fishing and the preliminary results of the acoustic monitoring program, which indicate a rapid decline in vaquita abundance. [SC/65b]

The Committee also **reiterates** its previous recommendations (IWC, 2011a[19]; 2012a[20]) to continue research on

[19]International Whaling Commission. 2011. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 12:1-75.
[20]International Whaling Commission. 2012. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 13:1-74.

technologies to replace gillnetting for finfish or otherwise to remove all gillnets from the vaquita's entire range (IWC, 2008d[21]; 2009d[22]; 2010d[23]; 2011d[24]; 2012e[25]; 2013e[26]; 2014j[27]). [SC/65b]

The Committee **encourages** the Government of Mexico to maintain and, as necessary, refine or expand the acoustic monitoring programme as the only feasible way of evaluating the effectiveness of the recovery plan contained in the federal Action Program for the Conservation of Vaquita (PACE-Vaquita). The Committee **strongly endorses** and **applauds** the work of the team (Coordinación de Investigación y Conservación de Mamíferos Marinos) at CONANP for the field work and data analysis and of the steering committee for the review and evaluation of the monitoring programme. [SC/65b]

Hector's dolphin [Agenda item 14.4.2 in SC/65b]

The Committee **respectfully requests** that the New Zealand government provide updates of the MPI report on a regular basis.

The Committee **agrees** that this matter deserves closer scrutiny than was possible in the time available at this year's meeting. Next year the sub-committee will make provision to ensure appropriate evaluation of abundance estimates.

Maui's dolphin [Agenda item 14.3.2.1 in SC/65a and 14.4.2.1 in SC/65b]

Maui's dolphin is the North Island (New Zealand) coastal endemic sub-species of Hector's dolphin. The Committee was informed that the management measures it recommended last year were incorrectly attributed to a proposal by the New Zealand Government. The Committee **acknowledges and regrets** this mistake. [SC/65a]

The Committee **agrees** that management measures must be precautionary. If any fisheries with the potential for bycatch were to remain active within the range of Maui's dolphins, 100% observer coverage would maximise the chance of identifying any bycatch and providing information that might trigger immediate further area closures. [SC/65a]

In conclusion, the Committee **reiterates its extreme concern** about the survival of Maui's dolphin given the evidence of population decline, contraction of range and low current abundance. The Committee **agrees** that the human-caused death of even one dolphin in such a small population would increase the extinction risk for this subspecies. [SC/65a]

The Committee **emphasises** that the critically endangered status of this sub-species and the inherent and irresolvable uncertainty surrounding information on small populations require the immediate implementation of precautionary measures. Ensuring full protection of Maui's dolphins in all areas throughout their habitat, together with an ample buffer zone, will minimise the risk of bycatch and maximise the chances of population increase. [SC/65a]

The Committee **commends** the New Zealand Government for maintaining initial and interim protection measures for Maui's dolphin, and adding an additional 350km^2 set net restriction. However, the Committee **emphasises** that these measures fall significantly short of those previously recommended (IWC, 2013a[28]; 2014c[29]). The Committee **reiterates** its **extreme concern** about the continued decline of such a small population as the human-induced death of even one dolphin would increase the extinction risk for this subspecies. It also **reiterates** that rather than seeking further scientific evidence it is of highest priority to take immediate management actions that will eliminate bycatch of Maui's dolphins. This includes full closures of any fisheries within the range of Maui's dolphins that are known to pose a risk of bycatch of small cetaceans (i.e. set net and trawl fisheries). [SC/65a, SC/65b]

The Committee **re-emphasises** that the critically endangered status of Maui's dolphin and the inherent and irresolvable uncertainty surrounding information on small populations, require the implementation of precautionary measures. [SC/65b]

Ensuring full protection of Maui's dolphins in all areas throughout their habitat, together with an ample buffer zone, would minimise the risk of bycatch and maximise the chances of population increase. The Committee **notes** that the current range of Maui's dolphins comprises the area from Maunganui Bluff in the north to Whanganui in the south, offshore to 20 n.miles and including harbours. This range reflects all available sightings and strandings data for Maui's and Hector's dolphins along the West Coast of the North Island. The Committee **notes** that data from Hector's dolphins off the South Island, with most sightings in waters less than 100m deep and less than 20 n.miles offshore support our understanding of the offshore distribution of Maui's dolphins and the recommendation that within this defined area, fishing methods other than set nets and trawling should be used. [SC/65b]

The Committee **urges** the New Zealand Government to commit to specific population increase targets and timelines, and **respectfully requests** that reports be provided annually on progress towards conservation goals. [SC/65b]

Irrawaddy dolphins [Agenda item 14.3.3 in SC/65a and 14.4.6 in SC/65b]

The Committee **agrees** that the situation in Laos was of serious concern and that without urgent conservation measures in the trans-boundary pool and the surrounding area as recommended in SC/65a/SM05, the remaining dolphins will not persist for much longer. [SC/65a]

The Committee thanked Porter for this information and **encourages** further investigation in collaboration with health experts and biologists working in these (and other) regions. [SC/65a]

The Committee again **re-emphasises** that the situation in Laos and Cambodia is of **serious concern** and that without urgent intervention in the trans-boundary pool, and the surrounding area, the dolphins there will be eradicated. [SC/65a]

[21]International Whaling Commission. 2008. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 10: 302-21.
[22]International Whaling Commission. 2009. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 11: 311-33.
[23]International Whaling Commission. 2010. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 11(2): 306-31.
[24]International Whaling Commission. 2011. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 12: 272-95.
[25]International Whaling Commission. 2012. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 13: 263-91.
[26]International Whaling Commission. 2013. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 14: 273-317.
[27]International Whaling Commission. 2014. Report of the Scientific Committee. Annex L. Report of the Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage. (Suppl.)* 15: 345-79.
[28]International Whaling Commission. 2013. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 14: 1-86.
[29]International Whaling Commission. 2014. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 14: 1-1-75.

Effective enforcement of gillnet fisheries ban is essential to the survival of dolphins throughout their remaining Mekong River range and the Committee **recommends** that the governments of Cambodia and Laos give the highest priority to effective enforcement of existing dolphin conservation laws. The Committee **notes with concern** the assessment of the risk of the Don Sahong dam to the transborder sub-population and the Mekong River population as a whole, and **calls** for full and transparent assessment of the environmental impacts of this and other less destructive hydropower options. [SC/65b]

Harbour porpoise [Agenda item 14.3.6 in SC/65a]

SC/65a/SM21 reported on a ship board double-platform line-transect survey to assess harbour porpoise abundance in. Details can be found in Annex L, item 5.6. The abundance of harbour porpoises within the 'GAP area' between the North Sea and the Baltic was estimated at 40,475 animals (95% CI: 25,614-65,041, CV=0.235).

The Committee **welcomes** this work and **accepts** the abundance estimate.

An uncorrected abundance estimate of 683 animals (95% CI: 345-951) of harbour porpoises in northern Spanish waters was provided (SC/65a/SM20). These porpoises are considered part of the separate Iberian Peninsula Management Unit (ICES, 2013[30]). The Committee **endorses** the authors' view of the need for unbiased estimates of both abundance and bycatch for this area in order to provide reliable advice for conservation and management actions. It **strongly encourages** Portuguese and Spanish authorities to promote collaborative research projects towards this end.

Solomon Islands update on both live-capture and drive fisheries [Agenda item 14.3.7 in SC/65a]

The Committee **notes** that the new survey results presented by Oremus *et al.* (2013)[31] reinforce previously expressed concerns regarding the sustainability of live-capture removals from this small island-associated population of Indo-pacific bottlenose dolphins.

The Committee:

(1) **emphasises** the importance of verifying the true number of live-captures and associated dead dolphins - the new survey results **reinforce** previously expressed concerns regarding the sustainability of live-capture removals from this small island-associated population;
(2) **endorses** the recommendation of Oremus *et al.* (2013)[31] calling for the development of a DNA register, i.e. genetic samples of all dolphins captured should be collected systematically and archived to allow verification of their origin and legitimacy; and
(3) **reiterates its previous encouragements** for comparison of existing photo-id catalogues (e.g. that of RH Defran and this study) in order to produce a synthesis of sighting information.

SC/65a/SM08 described efforts to document the numbers and species of dolphins killed recently in the traditional drive hunts on the island of Malaita in early 2013. The Committee **thanked** the authors for this report, and:

(1) **commends** the Government of the Solomon Islands and the Ministry of Fisheries and Marine Resources for the substantial funding provided to conduct the surveys and for facilitating the work on the traditional drive hunts;
(2) **agrees** that there is an urgent need for estimates of the abundance of small cetaceans around Malaita and, if possible, the Solomon Islands as a whole; and
(3) **expresses concern** regarding the potential depletion of local populations given the scale of the recent (and historical) catches.

The Committee **recognises** the great potential conservation value that would result if it was possible to extend the surveyed area to include the Solomon Islands. The Committee therefore **recommends** that the Secretariat forward a letter on behalf of the Committee expressing its appreciation for the current survey programme, explaining the benefits of extending the 2014 survey to the Solomon Islands and respectfully requesting this to be considered if at all possible.

The Committee also **encourages** the Australian Museum, Sydney to grant the authors of SC/65a/SM08 access to pantropical spotted dolphin teeth and teeth from other specimens from the Solomon's hunt that could be used to compare past and modern genetic diversity.

Finally, the Committee **endorses the recommendations** of SC/65a/SM08 encouraging the Solomon Islands Ministry of Fisheries and Ministry of Environment to:

(1) collect information on all future hunts and, if possible, provide some verification of species and numbers through independent observers or photographs;
(2) collect genetic samples (e.g. skin, meat, teeth) from each hunt, to confirm species identification and monitor changes in diversity and population identity over time; and
(3) support further surveys of waters around Malaita (and other islands, if possible) to estimate the abundance of small cetaceans.

Amazon River dolphins: Boto and tucuxi [Agenda item 14.3.8 in SC/65a and 14.4.9 in SC/65b]

The Committee **commends** Brazil for its National Action Plan for the Conservation of Aquatic Mammals and Small Cetaceans, and **welcomes** the report on implementation relative to these two species. [SC/65a]

The Committee also **reiterates its previous recommendation** that an international scientific Workshop be organised involving scientists and managers from the range states, with the goal of addressing research and conservation priorities, standardising methodologies and planning long-term strategies. [SC/65a]

Williams and others conducted analyses to infer trends in boto and tucuxi numbers in the Colombian Amazon. They estimated an 87% chance that the boto is declining and an 80% chance that the tucuxi is stable or increasing. The Committee **expresses its appreciation** for this information on the boto and tucuxi. [SC/65a]

The Committee **commends** the Government of Brazil for responding to the current situation, **noting** that emerging cooperative efforts amongst the range states of the Amazon basin present a cause for optimism and that the Brazilian Ministry of Foreign Affairs could play a role in encouraging cooperation with other governments. [SC/65b]

The Committee **encourages** further coordination between governments as a means to strengthen the effectiveness of conservation actions. The Buenos Aires Group was recognised as a useful caucus for discussions on conservation actions for the Amazon River dolphins. [SC/65b]

[30]ICES. 2013. Report of the Working Group on Marine Mammal Ecology (WGMME), 4-7 February 2013, Paris, France. *ICES CM* 2013/ACOM.26: 117pp.
[31]Oremus, M., Leqata, J., Hurutarau, J., Taei, S., Donoghue, M. and Baker, C.S. 2013. Population status of Indo-Pacific bottlenose dolphins, *Tursiops aduncus*, in the Solomon Islands and assessment of live-capture sustainability. South Pacific Whale Research Consortium final report. 65pp.

The Committee once again **reiterates** its **serious concerns** about the potential population implications of the intentional killing of both botos and tucuxis for use as bait in the piracatinga fishery. It expresses **support** for the priority actions to assess and mitigate the capture of dolphins for bait contained in the Brazilian National Action Plan for Small Cetaceans and **reiterates its previous recommendation** that an international scientific workshop be organised involving scientists and managers from the range states, with the goal of addressing research and conservation priorities, standardising methodologies and planning long-term strategies.

In particular, the Committee **calls upon** the relevant authorities in each range state to continue and strengthen their efforts to:

(1) assess and monitor the impact of intentional and incidental river dolphin capture relative to the density of local populations;
(2) evaluate and monitor the use of botos and tucuxis as bait in fishing for piracatinga; and
(3) test alternative baits (e.g. slaughter house waste products) for use in piracatinga fishing. [SC/65b]

The Committee **encourages** the presentation of a report next year on progress in the development and implementation of an inspection plan to combat the targeted catch of Amazonian dolphins for bait. [SC/65b]

Russian Far East [Agenda item 14.4.5.1 in SC/65b]
The Committee **reiterates** its longstanding recommendation that no removals of small cetaceans (live capture or deliberate killing) should be authorised until a full assessment of sustainability has been completed and **recommends** transient and resident killer whales be managed as distinct units and that studies in the western Okhotsk Sea be continued and be expanded.

Antarctic killer whales [Agenda item 14.4.5.2 in SC/65b]
The Committee **recognises** the importance of these projects on Antarctic and sub-Antarctic killer whales, **encourages** their continuation and **recommends** any further studies consider any impacts of tagging as part of their ongoing work.

Yangtze finless porpoise [Agenda item 14.4.7 in SC/65b]
The Committee **is concerned** that given the scale of anthropogenic pressures from *inter alia* bycatch, vessel traffic, sand mining and pollution, preventing the extinction of this subspecies will be a daunting challenge. Our concern is heightened because the same decline was witnessed with the decline and extinction of the baiji. Support from government officials at the highest levels, regional and national, is essential. Current conservation measures include reserves that are not appropriately designed or not adequately enforced.

Given its **grave concern** about the rapid, ongoing decline of Yangtze finless porpoises throughout their range, the Committee **recommends** that stronger measures be taken immediately, beginning by upgrading the subspecies to State I Protected status in Chinese legislation and implementing a national action plan with the necessary policy and financial support.

The Committee further **recommends** that all effort be made to protect Yangtze finless porpoises in their natural habitat. These include: (a) identifying river and lake segments with the highest porpoise concentrations, enforcing appropriate protection measures (including fishing bans) there year-round; (b) vigorously enforcing basin-wide prohibitions on electro-fishing and other fishing activities known or suspected to threaten porpoises; (c) vigorously enforcing regional and seasonal closures of sand-mining; (d) strengthening pollution control measures; and (e) ensuring that before any further modification of the natural flow regime (or other natural features) of the Yangtze ecosystem are allowed to take place, the implications for finless porpoises are investigated and taken into account.

The Committee **recommends** that the Secretariat send a letter to the appropriate Chinese Government authorities, drawing their attention to these recommendations.

14.4.8 Franciscana [Agenda item 14.4.8 in SC/65b]
SC/65b/SM18 reports on nine days of helicopter experiments partially funded by the IWC Small Cetacean Research Fund to evaluate availability bias in franciscana observations made from an aerial survey platform. Results showed that availability bias is underestimated when using data from surface platforms, resulting in overestimation of abundance. The Committee **recommends** that estimates of availability bias derived from aerial, rather than surface platforms be used when analysing aerial survey data for abundance estimation.

The Committee **expresses its concern** regarding the increase of reported franciscana entanglements in sub-regions within FMA I. The Committee **recommends** that the impacts of bycatch and human-related mortality on franciscanas within sub-regions be assessed and mitigated It further **recommends** the assessment of finer-scale management area boundaries and that FMA definitions be supported to the greatest extent possible by analyses of both nuclear and mitochondrial markers and other indicators. The Committee **agrees** that the goal of species conservation is to maintain viable Franciscana populations in all areas where they occur.

The Committee **reiterates** its previous recommendations:

(1) on the need to gather additional basic data on demography and life history, so that the status of each management unit can be evaluated and appropriate conservation measures designed and implemented;
(2) the need for bycatch to be estimated in additional areas and for assessment of other possible threat factors, such as underwater noise, chemical pollution from coastal development and industrial and human waste discharge, oil and gas exploration activities and vessel traffic; and
(3) the need for international collaboration to continue and expand the investigations into population structure and to assess its implications for conservation, especially the strengthening of the regional collaboration between Argentina, Uruguay and Brazil to implement conservation management actions that address bycatch and other threats.

Humpback dolphins [Agenda item 14.4.11 in SC/65b]
The Committee **endorses** the following recommendations by the workshop:

(1) immediate banning of all gill and trammel nets within the entire known habitat of the Taiwanese white dolphin;
(2) compensation for fishers willing to engage in alternative livelihoods;
(3) compensation to aid in the transition to alternative fishing gear that is both sustainable and dolphin-friendly, such as handlines; and
(4) a strict enforcement of the existing inshore (inshore of 3 n.miles) trawler ban.

The Committee also discussed three candidate wind farms planned for the Eastern Taiwan Strait, one of which

overlaps with the northernmost range of the Taiwanese white dolphin. Such threats were a global concern for coastal small cetaceans and agreed that future meetings of the sub-committee should consider the impact of offshore renewables and land reclamation on small cetaceans. It **recalls the advice** provided by the Committee with respect to marine renewables provided in IWC (2013a)[32] and **commends** this to the appropriate authorities.

The Committee received a summary of a report from a recent workshop on Marine Protected Areas (MPAs) for the Indo-Pacific humpback dolphin (*Sousa chinensis*) in the East Asia Ecoregion (January 2014). This workshop focused on the usefulness of establishing an East Asian network of MPAs. The Committee **welcomes** the positive steps taken at this workshop towards better protection for populations of *Sousa chinensis* which are under pressure from a multitude of threats associated with resource competition, coastal development and habitat loss throughout the East Asia region. The Committee **highlights** the critically endangered status of Taiwanese white dolphin and stressed the need for expediency in MPA designation and other management strategies.

Takes of small cetaceans [Agenda item 14.4 in SC/65a and SC/65b]

Regarding the species that are subject to direct exploitation in Japan (i.e. common bottlenose dolphins, striped dolphins which apparently experienced a collapse of the coastal population, spotted dolphins, Risso's dolphins, false killer whales and Pacific white-sided dolphins), the Committee expresses **concern** that catch limits exceed sustainable levels and that abundance estimates of all species are now more than ten years old, particularly given the indications of population decline in a number of the species (IWC, 1992[33]; 1993[34]; 1998c[35]; Kasuya, 1985[36]; 1999[37]). The Committee therefore **re-iterates** its previous concerns (IWC, 1992[33]; 1993[34]; 1998c[35]) and **recommends** that:

(1) up-to-date assessments of these exploited populations be undertaken, including studies of population structure and life-history;
(2) up-to-date data on struck and lost rates, bycatch rates, directed hunting effort, stock identity and reproductive status and age composition of catches be collected and made available; and
(3) catch limits take into account struck and lost and bycatch rates and be based on up-to-date population assessments, and be sustainable with allowance for population recovery. **[Agenda item 14.4.1 in SC/65a]**

The Committee **agrees** the issue of total removals in the drive fisheries needs to be more critically examined and incorporated into population assessments. Based on detailed information provided in Annex L concerning live captures of bottlenose dolphins during the Taiji hunt and export to *inter alia* China (Zhang *et al.*, 2012[38]), the Committee **also agrees** that the issue of live removals in drive fisheries must also be taken into account in assessments and notes the lack of current data on either stock identity or stock size for the bottlenose dolphins in waters the off Taiji. Finally, the Committee noted that stress experienced during long processing time of captured animals (up to five days) will increase the likelihood of post-capture mortality (see Annex L). **[Agenda item 14.4.12 in SC/65b]**

Based on the foregoing information, the Committee **reiterates its previous concerns and recommendations** that there is an **urgent need** for an up-to-date assessment of the targeted populations. This is especially needed for the common bottlenose dolphins subject to exploitation in the Japanese drive fisheries and live captures. Any new assessment must include, as indicated above, explicit consideration of cryptic mortality and subsequently consider the sustainability of removals for international trade. **[Agenda item 14.4.12 in SC/65b]**

The Committee **reiterates** its long standing recommendation that no small cetacean removals (live capture or directed harvest) should be authorised until a full and complete assessment has been made of their sustainability. **[Agenda item 14.5.1.1 in SC/65b]**

A reports on small cetacean landings recorded in Dixcove Port (Ghana) in 2013-14 was presented (SC/65b/SM17). The Committee **thanks** the authors for this important information and **expresses serious concern** over the threat to these populations. **[Agenda item 14.5.1.1 in SC/65b]**

The Committee **welcomes** received new information on the release of three Indo-Pacific bottlenose dolphins in 2013 in Jeju-do, Korea. The animals appear to be interacting successfully with wild population. The overall population size was estimated at 104 and the population is thought to be stable. **[Agenda item 14.5.1.1 in SC/65b]**

Accidental takes [Agenda item 14.5.1.2 in SC/65b]

The Committee **welcomes** the recent improvements in the implementation of the ban [of driftnets in the Mediterranean] and **expresses concern** over the ongoing illegal driftnetting and **recommends** that countries increase enforcement capacity and penalties for any illegal, unreported and unregulated (IUU) fishing. In addition to existing EU legislation, all Mediterranean countries are party to the General Fisheries Commission for the Mediterranean (GFCM) which bans the use of large pelagic driftnets (>2.5km long and mesh size >10cm).

The Committee **agrees** that improving the identification of ports and areas affected by the illegal driftnet fishery was of considerable importance and should be pursued further.

From the progress reports, the Committee noted that the bycatch of finless porpoises in South Korean waters was still high. Acknowledging previous recommendations, the Korean Government has started a monitoring and mitigation programme on the stow net fisheries which are responsible for 95% of finless porpoise bycatch. The Committee **looks forward** to results of the programme next year.

Significant direct and incidental catches of small cetaceans: an update [Agenda item 14.4.3 in SC/65a]

Donovan drew attention to the Committee's 'Report on Significant Direct and Incidental Catches of Small

[32]International Whaling Commission. 2013. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 14: 1-86.
[33]International Whaling Commission. 1992. Report of the Scientific Committee. *Rep. int. Whal. Commn* 42: 51-86.
[34]International Whaling Commission. 1993. Report of the Scientific Committee. *Rep. int. Whal. Commn* 43: 55-92.
[35]International Whaling Commission. 1998. Report of the Scientific Committee. Annex M. Report of the Sub-Committee on Small Cetaceans. *Rep. int. Whal. Commn* 48: 170-82.
[36]Kasuya, T. 1985. Fishery-dolphin conflict in the Iki Island area of Japan. pp.354. *In*: Beddington, J.R., Beverton, R.J.H. and Lavigne, D.M. (eds). *Marine Mammals and Fisheries*. George Allen and Unwin, London.
[37]Kasuya, T. 1999. Review of the biology and exploitation of striped dolphins off Japan. *J. Cetacean Res. Manage.* 1(1): 81-100.
[38]Zhang, P., Sun, N., Yao, Z. and Zhang, X. 2012. Historical and current records of aquarium cetaceans in China. Zoo biology. *Zoo Biology* 31(3): 336-49.

Cetaceans' that was prepared for the United Nations Conference on Environment and Development (UNCED) in 1992 (Bjørge *et al.*, 1994[39]). Whilst recognising that this was a major undertaking, he suggested that there was a need for a single, up-to-date, authoritative reference on this topic and that the Sub-committee on Small Cetaceans was an appropriate group for producing such a document. After a short discussion on the merit and the difficulties of this idea, the Committee **agrees** to consider it in more detail next year.

Conservation and Management Plans [Agenda item 14.7 in SC/65b]

The Committee **agrees** to trial a new intersessional approach for situations that are considered high priority from a conservation perspective at the species or population level, especially where the indications are that time is short and no mitigation actions are in place. An intersessional 'task team' of appropriate experts will be identified from the sub-committee on small cetaceans…..Work will be undertaken intersessionally to better define this task team approach.

15. WHALEWATCHING

15.1 Assess the impact of whalewatching on cetaceans

The Committee **agrees** that a joint session on stress responses related to vessel presence and shipping noise be held next year by the sub-committee on whalewatching and the SWG on environmental concerns, provided sufficient information is available. [SC/65a]

The Committee **welcomes** this work [on the mathematical models for the behavioural, social and spatial interactions of bottlenose dolphins] and **encourages** future development and its use in case studies. [SC/65a]

The Committee **reiterates** the recommendation made at 2012 meeting that an international scientific workshop be organised involving scientists and managers from the boto range states, with the goal of addressing research and conservation priorities, standardising methodologies and planning long-term strategies. [SC/65b]

The Committee **emphasises** that situations of extreme concern like Bocas del Toro, where recommendations need to be directly communicated with governments, need a more focussed mechanism to bring them to the attention of the Standing Working Group on Whalewatching and the Conservation Committee, than a simple presentation of the Scientific Committee report. [SC/65b]

The Committee **endorses** the following recommended mitigation measures from SC/65b/WW06, which are consistent with the IWC Guiding Principles (see SC/65b/WW04): (1) licensing should be limited and license issuance should be regularly re-evaluated; (2) operator training workshops and a certification program for best dolphin watching practises should be developed and implemented; (3) a maximum of two dolphin watching boats should follow a single group of dolphins at one time; (4) new boats arriving and encountering a dolphin group should remain outside a 'waiting zone' of 300m, and allow a 30min 'resting time' before approaching dolphins after a previous interaction; and (5) arriving boats should either stop in the 'waiting zone' if other boats are already present, or move to other parts of the bay to look for a different group of dolphins. The Committee also agrees that speed restrictions and propeller shrouding can reduce collision risk and severity between dolphin watching boats and cetaceans. [SC/65b]

15.2 Review whalewatching in the Republic of Korea

Whalewatching from one vessel began in 2009 in Ulsan. Species encountered include long-beaked common dolphins, common minke whales, Pacific white-sided dolphins, false killer whales, common bottlenose dolphins and occasional finless porpoises. Tourism numbers are increasing and are expected to reach 20,000 in 2013. [SC/65a]

The Committee **commends** the Jeju Government and the Ministry of Oceans and Fisheries for their precautionary approach [to bottlenosed dolphin watching off Jeju] and **recommends** that research be continued on the bottlenose dolphin population of Jeju. [SC/65a]

Guidelines are being developed for Korean whalewatching and the Committee **refers** the developers to the Commission's guiding principles and the Compilation of Worldwide Whalewatching Regulations[40]. [SC/65a]

15.3 Progress on Commission's Five-Year Strategic Plan including guidelines and regulations

15.3.1 Large-scale whalewatching experiment (LaWE) steering group

The Committee **agrees** to establish a new intersessional working group, with New as Convenor, tasked with developing a revised work plan to move forward with this project, now named the Modelling and Assessment of Whalewatching Impacts (MAWI), which will seek to build on what was learned in LaWE (see Annex M). The group, using the Five-Year Strategic Plan research objectives and actions as guidance, will seek to define the specific research questions and hypotheses that will most benefit understanding of the impact of whalewatching, identify those whalewatching locations that would be suitable and amenable for targeted studies addressing these questions, and summarise the current modelling tools available to analyse the data that will be collected. Once these issues have been addressed, it will be possible to identify a timeline, benchmarks, budgets and any additional resource or support needs. [SC/65a]

At 2014 meeting, the Committee received information on the progress with MAWI. The group was tasked to define specific research questions and hypotheses that would best advance understanding the impact of whalewatching, identify whalewatching locations that would be most suitable and amenable for targeted studies addressing these questions, and summarise the current modelling tools available to analyse the data that will be collected. The Committee **welcomes** this information and looks forward to further discussion at the 2015 Annual Meeting. [SC/65b]

15.3.2 Guiding principles development

SC/65a/WW03 was a draft of the guiding principles produced per Action 1.1 of the Commission's Five-Year Strategic Plan for Whalewatching. The principles include general management considerations and guidelines for cetacean watching. These guiding principles are fundamental to the development of the Handbook as part of the Commission's Five-Year Strategic Plan for Whalewatching. [SC/65a]

The Committee **agrees** to develop a 'background document' to annotate the guiding principles, with an explanation of their origin and evolution, as well as

[39]Bjørge, A., Brownell, R.L., Jr., Donovan, G.P. and Perrin, W.F. 1994. Significant direct and incidental catches of small cetaceans. A report by the Scientific Committee of the International Whaling Commission to the United Nations Conference on Environment and Development (UNCED). *Rep. Int. Whal. Commn (special issue)* 15: 75-130.

[40]*http://iwc.int/whalewatching.*

definitions of terms and other explanatory background (which might include illustrations of descriptive content). A draft of this document will be presented next year (see Annex M). [SC/65a]

The Committee **endorses** the guiding principles, which can be found in Annex M, Appendix 2, and **recommends** that they are posted on the Commission website. [SC/65a]

15.4 Other issues

The Committee **agrees** to establish an intersessional working group, with Rojas-Bracho as Convenor, to determine how the Committee can best assist and contribute to the Whalewatching Handbook. [SC/65a]

The Committee **agrees** that the guiding principles should be refined and then added to the website. It also recommends that the final data collection guiding principles be added to the Handbook. [SC/65b]

15.4.1 Consider information from platforms of opportunity of potential value to the Scientific Committee

The Committee noted that this type of handout [by the Tonga Whalewatching Operators Association] could allow 'citizen scientists' to provide data directly to research groups and **suggests** that the simple data form developed in (the Data Reporting Scheme) is revived and made available as a resource through the Commission's website. [SC/65a]

15.4.2 Swim-with-whale operations

The Committee **recommends** that the IWC's guiding principles (see Annex M, Appendix 2) be applied to any management decisions in Hervey Bay [an important resting area for humpback mother-calf pairs]. [SC/65a]

SC/65a/SM26 refers to swim-with-cetacean excursions in Japan and recommends monitoring the situation. The Committee **agrees** to add this to its agenda in 2014 and invites submissions on this situation at next year's meeting. [SC/65a]

15.4.3 Emerging whalewatching industry in Oman

The Committee **welcomes** the progress demonstrated by this initiative [operator workshops], and invites the continued submission of updates on this emerging situation. It encouraged local stakeholders, including non-governmental organisations, to continue their commitment to taking this initiative forward. In addition, the Committee **recommends** that the whalewatching guidelines in Oman consider the growing body of research on swim-with-whale encounters and the guiding principles (see Annex M, Appendix 2), which discourage this activity. [SC/65a]

15.4.4 Assessing 'whalewatching carrying capacity'

The Scientific Committee **welcomes** this research [impact of commercial whalewatching on sperm whales at Kaikoura] and **commends** New Zealand for active assessment and management of whalewatching in this region. [SC/65a]

SC/65a/WW05 reported on results from a survey of whalewatching passengers designed to identify causes of a decline in the number of whalewatchers in Hervey Bay, Australia. Details are found in Annex M, item 10. [SC/65a]

Last year[41], the Committee **strongly recommended** that the Panamanian authorities enforce national whalewatching regulations and recommended continued research to monitor this dolphin population [bottlenose dolphins in Bocas Del Toro, Panama] and the impacts of dolphin watching. However, the Committee received information that enforcement has not happened, and that there has recently been a confirmed report of a dolphin watching vessel striking a dolphin. In light of this observed mortality, the Committee **strongly reiterates** its previous recommendations. [SC/65a]

15.4.5 Whalewatching operators

The Committee was informed that in June 2014, local whalewatching associations, operators, guides and industry-related personnel will form the Japan Whale-Dolphin Watching Council from seven areas, to promote a responsible, sustainable whalewatching industry in Japan. The Committee **welcomes** this information and **endorses** the formation of the Council. The Committee **recommends** that the council expand its membership by contacting established operators in other regions of Japan. It was also suggested that the council contact established operators in other countries.

16. DNA TESTING

16.1 Review genetic methods for species, stock and individual identification

The Committee **welcomes** this document [details of the protocol used for the genetic analyses used by Iceland] and **agrees** that it responded appropriately to the recommendation from the Icelandic Scientific Permit Review Workshop.

The Committee **encourages** the preparation of technical documents on methods for species, stock and identification for discussion at the next year meeting under this agenda item. In 2014 meeting, the Committee received several technical documents and it welcomes the amount of work undertaken.

16.2 Review results of the 'amendments' of sequences deposited in GenBank

The Committee **agrees** that the list of accession numbers involving inconsistencies (Annex N, Appendix 2) should be sent to *GenBank* by Cipriano with a letter explaining the background and the main reasons for the inconsistencies, which include:

(1) species for which the taxonomy is still being worked out (e.g. the 'Brydes whale' species complex);
(2) species that have been recently split into new (or redescribed) species (e.g. the right whales and minke whales); and
(3) subspecies for which the taxonomy is still being investigated (e.g. the recognised sub-species of blue whales and minke whales).

Cipriano will also communicate about the need for an annotation indicating uncertainty in subspecies identity for a specimen. [SC/65a]

The Committee was informed that *GenBank* is willing to work with the IWC on this particular problem, and requested further explanations on the list received on accession numbers associated with problematic taxonomic designations. [SC/65b]

16.4 Reference databases and standards for diagnostic DNA registries

The Committee **appreciates** the efforts of Japan, Norway and Iceland in compiling and providing this detailed information of their registries. The Committee **reiterates** its view that the information provided in the new format greatly facilitated the annual review.

[41]International Whaling Ccommission. 2013. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 14: 61.

17. SCIENTIFIC PERMITS

17.1 Review report of Workshop for Icelandic Scientific Permit whaling

17.1.3 Committee's discussion

The Panel made a number of general points in addition to its review of individual topics. The Panel report (SC/65a/Rep03) is divided into sections based on the stated objectives of the programme: abundance; stock structure; biological parameters, feeding ecology; energetics; pollution; parasites and pathology. Each of these contained the proponents' summary of their results followed by an analysis of the results by the Panel including conclusions and specific recommendations. The final section presents the Panel's general overview and conclusions followed by a summary of all of the recommendations divided into short, medium and long-term.

The Committee **thanks** the Panel for its thorough review of the Icelandic programme. It also **acknowledges** the work of the Icelandic Research Programme scientists in producing revised papers after the Workshop so that they were available 40 days prior to the Annual Meeting.

17.2 Expert Panel Review of the results from JARPA II [Agenda item 17.1 in SC/65b]

This item was initially discussed by a working group (Annex O). Scientists from countries that made a statement at plenary that it was inappropriate for the SC to continue the review of the JARPA II programme under Annex P, did not participate in the discussion related to JARPA II agenda items (see Item 2). These scientists may not agree with any conclusions reached in this report under the relevant agenda items.

The Panel report (SC/65b/Rep02) is divided into sections based on the stated objectives of the programme: monitor cetacean habitat; elucidate temporal and spatial changes in stock structure; monitor whale abundance trends; monitor krill abundance and feeding ecology of whale stocks; monitor effects of contaminants on cetaceans; model competition among whale species; and improve management procedure for Antarctic minke whales. Each of these sections contained the proponents' summary of their results followed by a review from the Panel that included specific technical recommendations. The final section presented the Panel's general overview and conclusions containing recommendations divided into short, medium and long-term.

Further discussion was made especially for future procedures and written in the SC/65b report.

17.3 Planning for periodic review of results from JARPA II

The Committee **reaffirms** its guidelines[42] that when members submit substantive analyses for a review panel, the Panel Chair, in exercising their discretion, may allow presentation of such analyses in the same manner allowed for proponents.

Review of new or continuing proposals [Agenda item 17.3 in SC/65b]

JARPA II

In light of the announcement by Japan to cancel the JARPA II programme in the 2014/15 season in accordance with the 31 March 2014 Judgment of the International Court of Justice (ICJ), there was no discussion of JARPA II under this agenda item.

[42]International Whaling Commission. 2013. Revised 'Annex P' Process for the Review of Special Permit Proposals and Research Results from Existing and Completed Permits. *J. Cetacean Res. Manage. (Suppl.)* 14: 463-468.

JARPN II

The Committee was advised that following the 31 March 2014 Judgment of the ICJ regarding activities related to JARPA II, the Government of Japan voluntarily reviewed JARPN II. This voluntary review resulted in the reprioritisation of the research focus as well as recalculation of sample sizes to be pursued during the 2014 JARPN II survey.

In discussion, the Committee **recommends** that the proponents of JARPN II develop a more comprehensive document for review at the 2015 Annual Meeting that details how the above recalculations of sample size and changes in allotments of lethal versus non-lethal methods fit with achieving the overarching programmatic objectives. This recommendation is made because the written information available to the Committee was not sufficient to evaluate whether the numbers of animals to be taken had been adequately justified in relation to the specific objectives of the research.

Work plan [Agenda item 17.4 in SC/65b]

Planning for a periodic review of JARPN II

According to the procedure outlined in 'Annex P', the JARPN II programme is due to a periodic review in 2016.

Japan announced that the Government of Japan will meet the necessary costs for organising the Workshop to be held in Tokyo in January/February 2016. The Committee **agrees** to submit a budget request for the 2015/16 intersessional period to cover the travel and stay of the expert panel (see Item 26).

Planning for review of future Japanese Special Permit research in Antarctic

Japan announced that the Government of Japan plans to issue a Special Permit for a new research programme in the Antarctic starting in the season 2015/16. Japan wishes this programme to be reviewed at the 2015 Annual Meeting, in accordance with 'Annex P'.

The new proposal will be reviewed under the process stipulated in the Annex P. Japan will submit a new proposal to the chair of the Scientific Committee no later than six months before the next Annual Meeting of the Scientific Committee in 2015 (October/November 2014). The proposal should then be reviewed by a small specialist workshop with a limited but adequate number of invited experts. The Workshop should be organised at least 100 days before the Annual Meeting in 2015 (January/February 2015). Results of the Workshop should be duly submitted to the next Annual Meeting of the Committee in 2015 for its final review.

The Government of Japan will meet the necessary costs for organising the Workshop to be held in Tokyo in January/February 2015. The Committee **agrees** to submit a budget request for the 2014/15 intersessional period to cover the travel and stay of the expert panel (see Item 26).

18. WHALE SANCTUARIES [AGENDA ITEM 18 IN BOTH YEARS]

There were no new proposals for IWC Sanctuaries this year. The Committee **agrees** to keep this item on the Agenda. General matters relevant to marine protected areas were dealt with by relevant sub-groups [SC/65a].

Committee developed a draft work plan, **recognising** that the work plan may be modified under new guidance from the Commission at IWC/65 [SC/65b].

Preparation for the regular review of the Southern Ocean Sanctuary [Agenda item 18.1 in SC/65b]

Based on the direction from the Chair of the Commission, the Committee **agrees** to establish an intersessional email group (comprising Zerbini (chair), Bjørge, Donovan, Double, Fortuna, Hall, Jackson, Kitakado, Palka and Robbins) to assemble scientific information that might assist the Commission to establish scientific objectives for SOS. The report from the group should provide a summary of information on distribution, migration, current abundance, status and trends, threats, and catches by species/stock in the Southern Ocean Sanctuary. In addition, the report should **reiterate** the Committee's recommendations from the 2004 review to facilitate reviews of Sanctuaries and Sanctuary proposals (item B, numbers (1)-(7) in Appendix 1) and outline how the information provided relates to these recommendations. The report of this email group will be circulated for information of the members of the Committee and submitted to the Commission three weeks before IWC65.

The Committee **agrees** that there was a need for more discussion of the review process. There were differing views on the merits of the proposals in SC/65b/O01 and the success of the process in 2004. The Committee **agrees** these discussions can better take place at the 2015 Annual Meeting following elaboration of objectives and guidance from the Commission.

South Atlantic Sanctuary proposal [Agenda item 18.2 in SC/65b]

In 2004, the Committee agreed that the involvement of independent external reviewers in the review of the SOS had been largely positive and that involvement of external reviewers should continue, both for future reviews and reviews of future Sanctuary proposals. It was **agreed** that external experts should be involved in the SAWS review process but there were different views on the success of the process used to review the SOS in 2004. The Committee **requests** further clarification from the Commission at IWC/65 on recommendations for the SAWS review process. Based on any advice from the Commission, the Committee could then finalise the details of the review process at the 2015 Annual Meeting such that the review can be completed at the 2016 Annual Meeting.

19. SOUTHERN OCEAN RESEARCH PARTNERSHIP [AGENDA ITEM 19 IN BOTH REPORTS]

The SORP meeting made key recommendations in relation to the SORP initiative:

(1) to ensure all SORP Partners are seeking funding from all suitable sources to ensure the five existing SORP research projects are resourced adequately;
(2) to improve communication with the Commission on SORP-related outcomes to ensure that they are aware of the scientific products and to encourage financial support;
(3) to improve the dissemination of information on SORP projects and initiatives;
(4) for SORP Partners to encourage all platforms of opportunity and, where applicable, citizen science, to collect data for inclusion in SORP research projects, thereby reducing the logistic constraints of circumpolar coverage and overall expenditure;
(5) that all data and samples collected from international, collaborative research efforts such as SORP are stored and archived in recognised central repositories; and
(6) that the holders of large, long-term datasets that contain valuable information relevant to SORP, particularly acoustic data, should be strongly encouraged to analyse and publish these data as soon as possible.

The Committee **congratulates** the many scientists engaged in SORP for the significant progress and new information presented to the Scientific Committee. It **endorses** the recommendations above and notes that the scientific results were being integrated into the broader work of the Committee. [SC/65a]

The Committee **agrees** that the preliminary objective of the Antarctic blue whale project had now been met; the identification of the most appropriate survey design method. The project has also developed a passive acoustic tracking technique that has ramifications for all future whale surveys in Antarctica. The Committee **agrees** that the data from this SORP project are key to the assessment of the Antarctic blue whale population. [SC/65a]

The Committee **agrees** that the collection of data through platforms of opportunity may be a highly effective way to collect data in the remote Southern Ocean. [SC/65a]

The Scientific Committee **welcomes** the scientific information contributed by on-going IWC-SORP research projects and **recommends** their continuation. [SC/65b]

The Committee **expresses concern** that there are few funds remaining in the IWC-SORP budget, including the funds necessary to maintain centralised project coordination. It therefore **recommends** the continuation of a funded coordinator within IWC-SORP in order to sustain the momentum of this large collaborative research effort, to ensure the communication of high-calibre scientific research to the Committee, and to leverage future funding to the project. It also **urges** the Commission to review the funding status of IWC-SORP and to facilitate sustainable support for these long-term research initiatives. [SC/65b]

20. IWC LIST OF RECOGNISED SPECIES

The recent literature in cetacean taxonomy (SC/65a/O01) was reviewed and discussed (see Annex L) and it was agreed to add two newly recognised species to the List. *Inia geoffrensis* has been split into the Amazon river dolphin, *I. geoffrensis* and the newly recognised Bolivian bufeo, *I. boliviensis*[43]. *Neophocaena phocaenoides* has been split into the Indo-Pacific finless porpoise, *N. phocaenoides* and the newly recognised narrow-ridged finless porpoise, *N. asiaeorientalis*[44]. New analyses based on the cytochrome b gene (SC/65a/SM03) have confirmed the split of the finless porpoises.

The Burrunan dolphin *Tursiops australis* was recently described but its validity is uncertain and the Committee **agrees** to not add it to the List at present, pending further studies[45]. It was noted that the extent of sympatry of the two finless porpoise species (Taiwan Strait) is thought to be small, and further sampling (molecular and morphological) to investigate possible divisions within the two recognised species is encouraged. [SC/65a]

[43]Ruiz-García, M. and Shostell, J.M. 2010. *Biology, evolution and conservation of river dolphins within South America and Asia.* Nova Science Publishers, New York.
[44]Jefferson, T.A. and J.Y. Wang. 2011. Revision of the taxonomy of finless porpoises (genus *Neophocaena*): the existence of two species. *Journal of Marine Animals and their Ecology* 4(1): 3-16.
[45]Charlton-Robb, K., Gershwin, L., Thompson, R., Austin, J., Owen, K. and McKechnie, S.W. 2011. A new dolphin species, the Burrunan dolphin *Tursiops australis sp. Nov*., endemic to southern Australian waters. *PLoS ONE* 6(9). e24047.doi:10.1371/journal.pone.0024047.

The Committee also recalled the open questions remaining about the taxonomy of the Bryde's whale species complex and the holotype of the common minke whale. With respect to the former, the genetic identity of the holotype specimen of *Balaenoptera edeni* remains to be identified; the Committee **reiterates** its previous recommendation that this be done. [SC/65a]

The Committee also **agrees** that the IWC list of recognised species should be amended [SC/65a]:

- *Sousa teuszii* (Kükenthal, 1892) Atlantic humpback dolphin;
- *Sousa chinensis* (Osbeck, 1765) Pacific humpback dolphin;
- *Sousa plumbea* (G. Cuvier, 1829) Indian Ocean humpback dolphin; and
- *Sousa* un-named species. From Australia (the new species from Australia will soon be named and published. Therefore, both the scientific names and common names should be examined again at the next SC meeting).

The Committee **appreciates** the work of the Society of Marine Mammalogy Taxonomy Committee and **agrees** that this should be reviewed annually in the context of the IWC list to keep them synchronised. [SC/65b]

21. CONSERVATION MANAGEMENT PLANS [ITEM 21 IN BOTH REPORTS]

The Committee **agrees** that the focus for initial discussions this year is on large whales; it is a much larger and more complex task for small cetaceans. The Committee **seeks guidance** from the Commission on whether or not it wishes the Committee to develop a priority list of populations of small cetaceans for which CMPs might be of value. The Committee **recognises** that consultation with range states is an essential first step in developing a CMP. [SC/65a]

The Committee **agrees** that those populations with draft CMPs already in place (western gray whales – collaboratively with IUCN; southwest Atlantic population of southern right whales; and southeast Pacific population of southern right whales) remain a high priority for CMPs. [SC/65a]

21.1 Populations considered based on assessments by the Scientific Committee [SC/65a]

[The Committee identified:]

- Arabian Sea humpback whales;
- common minke whales in the coastal waters of China, Japan (especially the west coast) and Republic of Korea;
- North Atlantic right whales; and
- North Pacific right whales.

21.2 Populations considered based on knowledge of threats

[The Committee identified:]

- blue whales in the northern Indian Ocean;
- fin whales in the Mediterranean; and
- sperm whales in the Mediterranean

The Committee **agrees** that it is not currently in a position to propose any populations for CMPs based only on risk analysis where reporting is very limited.

Once a CMP is developed, the mitigation aspects of measures considered within it will need to be evaluated to assess what risk reduction is expected or being achieved. The Committee therefore **encourages** studies that fill any data gaps regarding ways that entanglement or ships strikes may be reduced, for input into CMPs. This may be in areas where CMPs have already been developed (western gray whales; southwest Atlantic population of Southern right whales; and southeast Pacific right whales); are currently under consideration as candidates (Arabian Sea humpback whales) or are high on the list of priority candidates. Recognising that CMPs continue to evolve, the Committee **agrees** that it would welcome requests for further scientific input into existing CMPs. [SC/65a]

In addition, the Committee **recommends** that the Secretariat bring the IWC's most current scientific and mitigation information to the relevant bodies within the FAO. [SC/65a]

The Committee repeats its recommendation of last year for a review of the template and criteria to enable better consideration of the options for a threat based approach. The Committee **agrees** that the issue of marine debris is appropriate for consideration as a first threat-based CMP. [SC/65b]

With respect to small cetaceans, the Committee **agrees** that CMPs for some threatened species and populations would be highly beneficial and would allow coordination of efforts. [SC/65b]

22. COMPILATION OF AGREED ABUNDANCE ESTIMATES

The Committee **agrees** with the *ad hoc* group that the most appropriate way to make progress on further development of summary tables for both its use and that of the Commission is to establish an intersessional Working Group that will consider doubtful and potentially missing estimates, compile and summarise existing estimates and report to next year's Annual Meeting [SC/65a]. The Committee has recognised the need for consistency in evaluating abundance estimates across sub-groups, recognising that to some extent 'acceptance' depends on the use to which the estimate is being put. It is also valuable for the Commission to have an updated overview of how many whales there are by broad ocean area. The Committee received an update on the work being undertaken by Allison to complete the list of accepted abundance estimates. A number of issues that require clarification had arisen during the year and it was **agreed** to establish an intersessional group to assist in this work. [SC/65b]

23. RESEARCH AND WORKSHOP PROPOSALS AND RESULTS [ITEM 23 IN BOTH REPORTS]

23.1 Review results from previously funded research proposals

Table 7 [SC/65a] or Table 21 [SC/65b] shows the progress of funded proposals from last year.

23.2 Review Workshop proposals

Table 8 [SC/65a] or Table 22 [SC/65b] summarises the Workshop proposals agreed at this year's meeting. Detailed information on funding is given under Item 26.

24. COMMITTEE PRIORITIES AND INITIAL AGENDA FOR THE 2015 AND 2016 MEETINGS

These are given in Table 23.

25. DATA PROCESSING AND COMPUTING NEEDS FOR 2014/15

These are given in Table 24.

26. FUNDING REQUIREMENTS [ITEM 26 IN BOTH REPORTS]

The Committee **agrees** that it is important to consider possible new systems for future budget allocations; it will add this topic to its agenda next year. In this regard it also noted the need to develop a two-year budget request next year. The Heads of Delegations **requested** that the Secretary review the governance rules, procedures and practices of the Scientific Committees of the other inter-governmental organisations and report back to the Scientific Committee in 2014 in order to assist discussions of the working methods of the Committee. They also requested a more substantial role in Committee governance. Recognising that these are funds provided by the Commission, the Committee **agrees** that *inter alia* Heads of Delegations should play a substantial role in discussions of how the budget should be allocated in future. Convenors should continue to play an important role since they are familiar with the research needs and priorities of each sub-group. The advice of the Commission will also be sought on both the process and its priorities. [SC/65a]

The Committee noted that at 2014 meeting it was expected to put forward a budget for a two-year period. In doing so it **draws the Commission's attention** to the unavoidable mismatch between the Scientific Committee year (May-June year 1 to May-June year 2), the Commission's biennial period (September year 1 to September year 3) and the Commission's financial year (1 January to 31 December). This makes planning rather more difficult, and is particularly difficult when the tasks undertaken are iterative i.e. the work needed in year 2 is heavily dependent on the results of year 1. This timing difference can be problematic if funded work is expected to be carried out in the period between the close of the Scientific Committee meeting and the adoption of the budget by the Commission which comes into force on the following 1 January (i.e. some 6 months after the Committee meeting). [SC/65b]

After some discussion, the Committee **agrees** to the process given in Annex S and summarised in Fig. 1 of the SC/65b report.

Using the approach in Annex S, and following up to step 4, the Committee **recommends to the Commission** the budget request shown in Table 10 of the SC/65b report, following discussion within sub-groups and a suggestion from the Convenors that was adopted by consensus.

The Committee notes that *pro formas* for all of the funding requests received are available on the Scientific Committee website. The Committee **thanks** the Convenors (and especially the Vice-Chair) for their hard work in developing the proposed draft and for the explanatory text. As the expected budget of £315,800 was exceeded in 2014/15, the explanation for the proposed reduced budget is given below (by project order in relation to the table). [SC/65b]

27. WORKING METHODS OF THE COMMITTEE [ITEM 27 IN BOTH REPORTS]

Annual Meetings [Agenda item 27.1 in SC/65a]

At 2013 meeting, the Committee continued to review its procedures both in terms of efficiency and cost savings and it **agrees** that changing the number of days in an already full schedule was not practical at this time. However, it **agrees** to keep this item on its Agenda. In particular, it **agrees** to a trial period of introducing an earlier deadline for paper submission. After considerable discussion, the Committee **agrees** to establish a deadline for primary papers as a trial for the 2014 Annual Meeting of seven days before the start of the meeting. In doing so it **agrees** that this has the potential to improve the Committee's efficiency in a number of ways.

Increasing the support of the Scientific Committee on conservation related issues [Agenda item 27.1 in SC/65b]

At the 2014 meeting, the Committee received a paper the extensive review on Committee's discussion on conservation related issues, recognising that the system for classifying statements, actions and funding was inevitably somewhat subjective. In discussion a number of points were raised. In conclusion, while different points of view had been expressed, the Committee **broadly agreed** with the need to:

(a) work carefully to ensure consistency and clarity over its recommendations especially those the expressed concerns over status and threats that required action by the Commission and others;
(b) improve communication with the Commission and others regarding the recommendations and concerns within its reports;
(c) keep track of recommendations and ensure that they are referred to and/or repeated as necessary;
(d) make workshop reports more accessible; and
(e) consider updating the 'specific topics of current concern' in its Rules of Procedure as had also been suggested in the review of other organisations produced by the Secretary (SC/65b/SCP02).

The Committee noted that the Secretariat was working to improve communications about all aspects of the Commission's work including that of the Scientific Committee, especially by improving the website. The Committee **agrees** to keep this item on its agenda.

Data access under Annex P [Agenda item 27.2 in SC/65b]

In the run up to the JARPA II review, a request for access to the data was made as specified in Annex P through Data Access Protocol B. Unfortunately this process proved to be more time consuming and difficult than expected. After a discussion amongst DAG members and representatives of data requesters and data owners on this specific case), a proposal for a following way forward in regard to improving the efficiency of the process was developed as outlined below. The Committee **agrees** that this is trialled from now, noting that further improvements may be made in the light of experience.

This process requires only minor amendments to the existing process. The revised Annex P is given as Annex P.

Improving the Scientific Committee budget review process [Agenda item 27.3 in SC/65b]

Following the development of the budget as described under Item 26 of SC/65b report, the initial feedback on the experiences from various sub-groups showed how complex (and time-consuming) agreeing and prioritising items for the Scientific Committee budget can be. The **primary function** of the Scientific Committee budget is to allow the essential work to take place that the Committee needs to fulfil its work plan as agreed by the Committee. It is not intended to be seen as a 'research fund' in the usual sense of the term. Should the Commission wish to establish a traditional research fund then **it would be appropriate** for this to dealt with outside the Scientific Committee's regular budget and handled in a similar way to the Small Cetaceans Voluntary Fund.

In order to facilitate discussions next year on the budget process and build upon this year's experience, the Committee **agrees** to establish an intersessional working group mainly to develop a discussion document to be available at least [one month] prior to the 2015 Annual Meeting that includes suggestions/proposals to be made. In parallel with the intersessional working group proposed above, the Committee also **agrees**, on a trial basis for the next intersessional period, a process (shown in Fig. 5 of SC/65b report).

29. PUBLICATIONS

The Committee was pleased to hear that the *Journal of Cetacean Research and Management* was now to become open access and freely available. It **agrees** that the *Supplement* should continue to be available in hard copy for participants given its central role at the meeting. The Committee **re-emphasises** the importance of the *Journal* to its work and **thanks** the Secretariat and the Editorial Board for its work.

Financial Statements for the Year ended 31 August 2013

Financial Statement for the year ended 31 August 2013

Statement of the Secretary's Responsibilities

The financial responsibilities of the Secretary to the Commission are set out in its Rules of Procedure and Financial Regulations. Fulfilment of those responsibilities requires the Secretary to prepare financial statements for each financial year which set out the state of affairs of the Commission as at the end of the financial year and the surplus or deficit of the Commission for that period. In preparing those financial statements, the Secretary should:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and estimates that are reasonable and prudent;
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Commission will continue in operation.

The Secretary is responsible for keeping adequate accounting records which disclose with reasonable accuracy at any time the financial position of the Commission. The Secretary is also responsible for safeguarding the assets of the Commission and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Independent Auditors' Report to the Commission

We have audited the financial statements of the International Whaling Commission for the year ended 31 August 2013 which comprise the accounting policies, the income and expenditure account, the analysis of expenditure, the balance sheet and the related notes on the following pages. These financial statements have been prepared under the accounting policies set out therein. This report is made solely to the Commission. Our audit work has been undertaken so that we might state to the Commission those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Commission for our audit work, for this report, or for the opinions we have formed.

Respective Responsibilities of the Secretary and Auditors

As described in the statement of the Secretary's responsibilities, the Secretary is responsible for the preparation of financial statements.

Neither statute nor the Commission has prescribed that the financial statements should give a true and fair view of the Commission's state of affairs at the end of each year within the specialised meaning of that expression in relation to financial statements. This recognised terminology signifies in accounting terms that statements are generally accepted as true and fair only if they comply in all material aspects with accepted accounting principles. These are embodied in accounting standards issued by the Accounting Standards Board. The Commission has adopted certain accounting policies which represent departures from accounting standards:

- fixed assets are not capitalised within the Commission's accounts. Instead fixed assets are charged to the income and expenditure account in the year of acquisition. Hence, the residual values of the furniture, fixtures and fittings and equipment are not reflected in the accounts;
- publications stocks are charged to the income and expenditure account in the year of acquisition and their year end valuation is not reflected in the accounts.
- provision is made for the severance pay which would be payable should the Commission cease to function.

This is permissible as the financial statements are not required to give a true and fair view.

It is our responsibility to form an independent opinion, based on our audit, on those statements and to report our opinion to you. We also report if the Commission has not kept proper accounting records or if we have not received all the information and explanations we require for our audit.

Basis of Opinion

We conducted our audit in accordance with International Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the Secretary in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Commission's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement whether caused by fraud or other irregularity or error. In forming our opinion, we also evaluated the overall adequacy of the presentation of information in the financial statements.

Added Emphasis

In forming our opinion we have taken account of the absence of a requirement for the financial statements to give a true and fair view as described above.

Opinion

In our opinion the financial statements have been properly prepared in accordance with the accounting policies and present a proper record of the transactions of the Commission for the year ended 31 August 2013.

Anthony Wright (Senior Statutory Auditor)
For and on behalf of **Thomas Quinn Chartered Accountants**
15 Station Road, St Ives, Cambridgeshire, PE27 5BH
15th January 2014

Accounting Policies - Year Ended 31 August 2013

The accounting policies adopted by the Commission in the preparation of these financial statements are as set out below. The departures from generally accepted accounting practice are considered not to be significant for the reasons stated.

Convention

These accounts are prepared under the historical cost convention (i.e. assets and liabilities are stated at cost and not re-valued).

Fixed Assets

The full cost of furniture and equipment is written off in the income and expenditure account in the year in which it is incurred. The total cost of equipment owned by the Commission amounts to £163,023 and its realisable value is not considered to be significant. Proposed expenditure on new items is included in budgets and raised by contributions for the year.

Publications

The full cost of printing publications is written off in the year. No account is taken of stocks which remain unsold at the balance sheet date. Most sales occur shortly after publication and so stock levels held are mainly made up of old unsold stock-which is unlikely to result in many sales, consequently their net realisable value is not significant.

Severance Pay Provision

The Commission provides for an indemnity to members of staff in the event of their appointment being terminated on the abolition of their posts. The indemnity varies according to length of service and therefore an annual provision is made to bring the total provision up to the maximum liability. This liability is calculated after adjusting for staff assessments since they would not form part of the Commission's liability.

Interest on Overdue Contributions

Interest is included in the income and expenditure account on the accruals basis and provision is made where its recoverability is in doubt.

Leases

The costs of operating leases are charged to the income and expenditure account as they fall due for payment.

Foreign Exchange

Transactions dominated in foreign currencies are translated into sterling at the rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated at the rate ruling at that date. These translation differences are dealt with in the income and expenditure account.

Retirement Benefits Scheme

The Commission operates a defined contribution retirement benefits scheme. The costs represent the amount of the Commission's contributions payable to the scheme in respect of the accounting period.

Income and Expenditure Account (Year Ended 31 August 2013)

	[Note]	2013 £	2013 £	2012 £	2012 £
INCOME: continuing operations					
Contributions from member governments	[App 1]		1,571,338		1,638,254
Interest on overdue financial contributions			8,341		9,478
Voluntary contributions for all Funds	[App 2]		319,900		297,923
Sales of publications			8,510		1,962
Sales of sponsored publications			209		1,780
Observers' registration fees			(550)		46,165
UK taxes recoverable			19,094		23,798
Staff assessments			170,254		170,450
Interest receivable			7,078		1,716
Sundry income			60		546
			2,104,234		2,192,073
Expenditure					
Secretariat	[1]	1,053,752		1,044,249	
Publications	[2]	16,130		28,440	
Annual meetings		126,023		401,650	
Other meetings		3,430		40,871	
Research expenditure	[3]	408,799		239,753	
Small cetaceans	[4]	73,535		178,591	
Southern Ocean Research Partnership (voluntary fund)	[5]	111,473		113,124	
Conservation Management Plan fund	[6]	15,479		5,386	
IWC - other work fund	[7]	151,785		103,727	
Gray whale tagging (voluntary fund)	[8]	130,351		253,030	
		2,090,757		2,408,821	
Provisions made for:					
Unpaid contributions		14,796		30,674	
Unpaid interest on overdue contributions		8,341		9,478	
Dilapidations		30,000		-	
Severance pay	[19]	27,800		10,800	
Other doubtful debts		(13)		(5,879)	
			2,171,681		2,453,894
(Deficit)/surplus for the year before transfers			(67,448)		(261,821)
Net transfers to/(from) Income and Expenditure Account					
Publications fund	[9]	(215)		(1,791)	
Research fund	[10]	75,383		(91,566)	
Small cetaceans fund	[11]	47,847		110,376	
Annual Meeting fund	[12]	(135,977)		18,650	
Southern Ocean Research Partnership fund	[13]	111,409		76,926	
Conservation Management Plan fund	[14]	15,360		5,296	
Operations fund	[15]	-		24,887	
IWC - other work fund	[16]	40,459		3,312	
Gray whale tagging fund	[17]	(38,290)		141,123	
			115,975		287,212
Surplus for the year after transfers			48,527		25,391

There are no recognised gains or losses for the current financial year and the preceding financial year other than as stated in the income and expenditure account.

Analysis of Expenditure (Year Ended 31 August 2013)

		2013 £	2012 £
1	**SECRETARIAT**		
	Salaries, national insurance and allowances	689,742	693,047
	Retirement and other benefit schemes	137,638	154,104
	Travelling expenses	16,880	3,928
	Office rent, heating and maintenance	95,984	91,825
	Insurance	4,948	5,361
	Postage and telecommunications	15,623	19,844
	Office equipment and consumables	50,796	50,282
	Professional fees	37,353	17,150
	Training and recruitment	5,045	3,918
	Photocopying	423	3,150
	Other including exchange differences	(679)	1,640
		1,053,752	1,044,249
2	**PUBLICATIONS**		
	Annual Report	2,185	9,922
	Journal Cetacean Research and Management	13,945	18,518
		16,130	28,440
3	**RESEARCH**		
	Invited Participants	80,759	70,395
	IA - Simulated minke whale line transect data (Smith)	5,000	-
	IDCR/SOWER biopsy and photo-ID database	11,288	-
	IA - abundance estimation Antarctic minke whales using SOWER data	-	10,470
	WNP minke whales: Workshop.	21,534	13,405
	IA - Statistical catch-at-age estimation for Antarctic minke whales	5,614	2,386
	Preparation re: survey issues relative to changes in minke whale abundance estimates between CPU and CPIII	-	4,000
	SH - Antarctic humpback whale catalogue	24,667	-
	SH - Blue whales photo-ID catalogue	3,000	10,000
	IWC global ship strike database	605	3,520
	SOCER (State of the Cetacean Environment Report)	2,618	3,000
	E - Risk assessment impact of pollutants on cetacean populations	45,000	19,150
	E - Website/listserve/communication tool cetacean disease	3,400	-
	IA - Statistical catch-at-age estimation for Antarctic minke whales	-	7,185
	E - Marine debris pre-meeting (Simmonds)	24,753	-
	AWMP - Developers fund (Donovan)	13,454	-
	AWMP - Genetic simulation studies	-	3,500
	BC - Ship strike database coordinator	7,000	-
	Workshop on Greenland hunts	7,635	7,721
	AWMP - Greenland humpback/bowhead modelling (Punt)	5,000	-
	SP - Icelandic SP review Workshop	14,798	-
	SH - Humpback whales: assessment model development	7,631	3,000
	SH - Antarctic blue whales photo-matching (Olson)	3,000	-
	Past cruise analysis and future cruise expenses	40,994	19,625
	Catch data	-	693
	RMP - Audit western North Pacific Bryde's whale survey data	2,000	-
	RMP - Investigate DNA/allozyme anomalies	-	1,000
	RMP - MSYR review Workshop	8,325	-
	RMP - Computing support	29,001	23,935
	BRG - Southern Ocean right whale photo-ID catalogue	3,000	-
	RMP - (SC) Intersessional	72	1,085
	Southern right whale assessment Workshop	-	19,546
	Pacific wide study on population structure and movement patterns	9,000	6,200
	BRG - Right whale survey (Best)	21,730	-
	Intersessional Workshop: Guidelines for the analysis of population genetic data and genetic data quality control	1,462	3,538
	SD - TOSSM project	433	-
	WW - LaWE Steering Group meeting	870	-
	WW - Data compilation and power analyses for LaWE	-	4,000
	WW - Guidelines and training in Oman (Baldwin)	3,500	-
	Other including exchange differences	1,656	2,400
		408,799	239,753
4	**SMALL CETACEANS**		
	SM - Invited Participants	5,940	4,294
	Franciscanas abundance estimate	7,738	23,246
	Conservation solutions for the Yangtze finless porpoise (Turvey; 1 year; £33,600)	-	25,200
	Conservation of coastal Indo-Pacific humpback and bottlenose dolphins west Madagascar (Cerchio; 3 years; £33,900)	11,187	11,206
	Abundance and distribution of the Atlantic humpback dolphin in Gabon and Congo (Collins; 1 year; £27,900)	6,975	20,944
	Investigation population ID Indo-Pacific humpback - north Bay of Bengal, Bangladesh (Smith; 2 years; £31,700)	9,510	15,869
	Photo-ID east Taiwan Strait population of Indo-Pacific humpback dolphins [*S. chinensis*) (Wang; 2 years; £32,500)	9,750	16,271
	Assess genetics and demography - dolphins taken in traditional drive-hunt in the Solomon Islands	4,238	21,212
	Assess threat re: coastal cetacean populations in Sarawak, Malaysia (Minton; 1 year; £20,440)	5,110	15,350
	Assess alternative fishing gears to avoid bycatch of vaquita in Upper Gulf of California, Mexico (1 year; £33,270)	8,318	24,952
	2013/14 SM species affected by catches in North Pacific (Chen)	4,553	-
	Cetacean abundance surveys SE Asia (Mustika; £15k)	(39)	-
	Other including exchange differences	255	47
		73,535	178,591

5	**SOUTHERN OCEAN RESEARCH PARTNERSHIP**		
	Foraging ecology and predator-prey interactions. Baleen whales and krill: study across Antarctica (Friedlaender)	-	3,769
	Assess migration and mixing of SH humpback whales around Antarctica? Phase 1: E. Australia and Oceania (Constantine and Segedin)	-	15,026
	Study distribution, abundance, migration and foraging ecology of 3 ecotypes of killer whales in Antarctica (Pitman)	-	1,794
	Study distribution, abundance, migration and foraging ecology of 3 ecotypes of killer whales in Antarctica (Guinet and Tixier)	-	915
	Foraging ecology and predator-prey interactions|.| baleen whales and krill: study across Antarctica (Part 2 - Coordinator's salary) (Friedlaender)	2,925	8,794
	Migration and mixing - humpback whales east Australia and Oceania – Coordinator's salary (Segedin)	3,904	-
	Study distribution, abundance, migration and foraging ecology of 3 ecotypes of killer whales in Antarctica (Pitman) (Part 2 - Coordinator's salary)	-	5,888
	Study distribution, relative abundance, migration patterns and foraging ecology of 3 ecotypes of killer whales in Antarctic and adjacent waters (Dalla Rosa) (Part 2 - Coordinator's salary)	764	3,129
	Living whales in the Southern Ocean: Workshop on methods for non-lethal cetacean research (Co-ordinator's salary) (Galletti)	-	5,257
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean: data analysis (for analysis salary) (Adams)	625	1,890
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean: data analysis (for analysis salary) (Mussolini and Shulman)	-	7,413
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean: coordinator and analysis salary (Stafford)	3,625	10,894
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean: £7,800 (steering group meeting) + £8,125 (Coordinator and salary for analysis) (Samaran)	3,992	11,959
	Living Whales Symposium, Chile, March 2012 - SORP funded	-	36,396
	South African blue whale project (Best)	2,519	-
	Antarctic blue whale project (Wadley)	11,705	-
	Killer whales (Pitman)	12,595	-
	Baleen whales (Friedlaender)	13,945	-
	Blue and fin whale acoustics (Stafford)	5,015	-
	Blue and fin whale acoustics (Samaran)	18,900	-
	Humpback whales (Constantine)	15,942	-
	Foraging range sub-Antarctic killer whales (De Bruyn)	15,015	-
		111,473	113,124
6	**CONSERVATION MANAGEMENT PLANS**		
	CMP expenditure (VC funded)	-	5,386
	Southwest Atlantic southern right whale meeting in Buenos Aires April 2013	5,479	-
	Steering Committee travel	2,000	-
	Southwest Atlantic southern right whale CMP Coordinator (Iñíguez)	8,000	-
		15,479	5,386
7	**IWC - OTHER WORK FUND**		
	GFR unspecified expenditure voluntary contributions	-	20,994
	Whalewatching Workshop - Argentina	-	10,479
	Ship strikes - IWC-ACCOBANS - joint Workshop and database	-	19,395
	Entanglement training Workshops	38,250	40,758
	North Pacific gray whale *Implementation Review*	5,868	9,757
	Western gray whale photo-catalogue	315	2,345
	ISRP stranding melon-headed whales, Madagascar	37,819	-
	Satellite telemetry whales Mediterranean Sea	23,043	-
	Whalewatching Workshop - Brisbane	46,170	-
	IWC-ACCOBANS - joint Workshop on ship-strikes, Monaco	320	-
		151,785	103,727
8	**GRAY WHALE TAGGING**		
	GWT expenditure (VC funded)	130,351	251,434
	Other including exchange differences	-	1,596
		130,351	253,030

Balance Sheet as at 31 August 2013

	[Note]	£	2013 £	£	2012 £
Cash on short term deposit		2,474,564		2,465,925	
Cash at bank on current account		1,219		22,359	
			2,475,783		2,488,283
Outstanding contributions from members including interest		533,387		503,412	
Less provision for doubtful debts		(526,026)		(502,889)	
			7,360		523
Other debtors and prepayments		91,850		49,603	
Less provision for other doubtful debts		-		-	
			91,850		49,603
			2,574,993		2,538,409
CREDITORS: amounts falling due within one year	[20]		(226,613)		(180,381)
NET CURRENT ASSETS			2,348,380		2,358,028
PROVISION FOR SEVERANCE PAY	[19]		(391,700)		(363,900)
PROVISION FOR DILAPIDATIONS			(30,000)		-
			1,926,680		1,994,128
FINANCED BY					
Publications fund	[9]		41,301		41,086
Research fund	[10]		306,402		381,785
Small cetaceans fund	[11]		82,414		130,262
Annual Meeting fund	[12]		121,421		(14,556)
Southern Ocean Research Partnership fund	[13]		17,518		128,926
Conservation Management Plan fund	[14]		224,003		239,362
Operations fund	[15]		23,288		23,288
IWC - other work fund	[16]		51,332		91,790
Gray whale tagging fund	[17]		31,200		(7,090)
General fund	[18]		1,027,801		979,274
	[21]		1,926,680		1,994,128

Approved on behalf of the Commission
Simon Brockington (Secretary)
Dated: 15 January 2014

Notes to the Accounts (Year Ended 31 August 2013)

	2013 £	2012 £
9 Publications fund		
Interest receivable	7	11
Receipts from sales of sponsored publications	208	1,780
Net transfers (to)/from income and expenditure account	215	1,791
Opening balance as at 01 September 2012	41,086	39,295
Closing balance as at 31 August 2013	41,301	41,086
10 Research fund		
Allocation for research	314,984	324,950
Voluntary contributions received	21,544	6,216
Interest receivable	145	153
Reallocation	(3,256)	-
Expenditure	(408,799)	(239,753)
Net transfers (to)/from income and expenditure account	(75,383)	91,566
Opening balance as at 01 September 2012	381,785	290,219
Closing balance as at 31 August 2013	306,402	381,785
11 Small cetaceans fund		
Allocation for small cetaceans	-	-
Voluntary contributions received	25,644	68,141
Interest receivable	43	73
Expenditure	(73,535)	(178,591)
Net transfers (to)/from income and expenditure account	(47,847)	(110,376)
Opening balance as at 01 September 2012	130,262	240,638
Closing balance as at 31 August 2013	82,414	130,262
12 Annual Meeting fund		
Allocation for meetings	262,000	383,000
Voluntary contributions received	-	-
Expenditure	(126,023)	(401,650)
Net transfers (to)/from income and expenditure account	135,977	(18,650)
Opening balance as at 01 September 2012	(14,556)	4,094
Closing balance as at 31 August 2013	121,421	(14,556)
13 Southern Ocean Research Partnership fund		
Allocation for research	-	16,000
Voluntary contributions received	-	20,127
Interest receivable	64	71
Expenditure	(111,473)	(113,124)
Net transfers (to)/from income and expenditure account	(111,409)	(76,926)
Opening balance as at 01 September 2012	128,926	205,852
Closing balance as at 31 August 2013	17,518	128,926
14 Conservation Management Plan fund		
Interest receivable	119	91
Expenditure	(15,479)	(5,386)
Net transfers (to)/from income and expenditure account	(15,360)	(5,296)
Opening balance as at 01 September 2012	239,362	244,658
Closing balance as at 31 August 2013	224,003	239,362

	2013 £	2012 £
15 Operations fund		
Allocation for other work	-	(24,887)
Net transfers (to)/from income and expenditure account	-	(24,887)
Opening balance as at 01 September 2012	23,288	48,175
Closing balance as at 31 August 2013	23,288	23,288
16 IWC - other work fund		
Voluntary contributions received	104,070	91,531
Interest receivable	-	(2)
Expenditure	(151,785)	(103,727)
Allocation for research	-	(16,000)
Allocation for other work	-	24,887
Reallocation	7,257	-
Net transfers (to)/from income and expenditure account	(40,459)	(3,312)
Opening balance as at 01 September 2012	91,790	95,102
Closing balance as at 31 August 2013	51,332	91,790
17 Gray whale tagging fund		
Voluntary contributions received	168,641	111,908
Expenditure	(130,351)	(253,030)
Net transfers (to)/from income and expenditure account	38,290	(141,123)
Opening balance as at 01 September 2012	(7,090)	134,033
Closing balance as at 31 August 2013	31,200	(7,090)
18 General fund		
Opening balance as at 01 September 2012	979,274	953,883
Net transfers (to)/from income and expenditure account	48,527	25,391
Closing balance as at 31 August 2013	1,027,801	979,274
19 Provision for severance pay		
Opening balance as at 01 September 2012	363,900	353,100
Net transfers (to)/from income and expenditure account	27,800	10,800
Closing balance as at 31 August 2013	391,700	363,900
20 Creditors: amounts falling due within one year		
Deferred contributions income	80,334	115,382
Other creditors and accruals	146,279	64,999
Closing balance as at 31 August 2013	226,613	180,381
21 Reconciliation of movement in funds		
Excess (surplus) of expenditure over income	(67,448)	(261,821)
Opening funds	2,129,829	2,391,650
Closing funds	2,062,381	2,129,829

22 Financial commitments

The Commission had annual commitments at 31 August 2013 under non-cancellable operating leases as set out below and which expire:

	2013		2012	
	Land and buildings £	Office equipment £	Land and buildings £	Office equipment £
Within 2 to 5 years	60,000	7,142	60,000	23,015

The lease on the IWC Secretariat Offices was renewed from 18 March 2009 for 10 years, with an option to break after 5 years.

Appendix 1

Financial Contributions for the Year Ended 31 August 2013

Line No.	Country	Financial Contribution
1	Antigua and Barbuda	6,525
2	Argentina	11,745
3	Australia	34,375
4	Austria	22,775
5	Belgium	22,775
6	Belize	4,350
7	Benin	6,525
8	Brazil	11,745
9	Bulgaria	7,830
10	Cambodia	6,525
11	Cameroon	7,830
12	Chile	11,745
13	China, P.R of	11,745
14	Colombia	11,745
15	Congo, Rep	4,350
16	Costa Rica	11,745
17	Cote d'Ivoire	11,745
18	Croatia	16,976
19	Cyprus	22,775
20	Czech Republic	22,775
21	Denmark	53,143
22	Dominica	4,350
23	Dominican Republic	11,745
24	Ecuador	11,745
25	Eritrea	4,350
26	Estonia	22,775
27	Finland	22,775
28	France	54,262
29	Gabon	6,525
30	Gambia, The	4,350
31	Germany	54,262
32	Ghana	11,745
33	Greece	16,976
34	Grenada	6,525
35	Guatemala	7,830
36	Guinea	6,525
37	Guinea-Bissau	6,525
38	Hungary	7,830
39	Iceland	53,143
40	India	11,745
41	Ireland	22,775
42	Israel	22,775
43	Italy	60,062
44	Japan	125,229
45	Kenya	7,830

Line No.	Country	Financial Contribution
46	Kiribati	6,525
47	Korea, Rep of	28,575
48	Lao PDR	6,525
49	Lithuania	7,830
50	Luxembourg	22,775
51	Mali	4,350
52	Marshall Islands	4,350
53	Mauritania	6,525
54	Mexico	11,745
55	Monaco	11,745
56	Mongolia	6,525
57	Morocco	11,745
58	Nauru	6,525
59	Netherlands	22,775
60	New Zealand	22,775
61	Nicaragua	4,350
62	Norway	53,143
63	Oman	22,775
64	Palau	6,525
65	Panama	15,660
66	Peru	11,745
67	Poland	11,745
68	Portugal	16,976
69	Romania	7,830
70	Russian Federation	26,742
71	San Marino	7,830
72	Senegal	4,350
73	Slovak Republic	16,976
74	Slovenia	22,775
75	Solomon Islands	4,350
76	South Africa	11,745
77	Spain	54,262
78	St Kitts and Nevis	6,525
79	St Vincent & The G.	6,525
80	St. Lucia	6,525
81	Suriname	4,350
82	Sweden	22,775
83	Switzerland	22,775
84	Tanzania	11,745
85	Togo	6,525
86	Tuvalu	6,525
87	United Kingdom	65,862
88	Uruguay	11,745
89	USA	84,630

Total originally requested from Contracting Governments	Total	1,623,972
Less Financial Contributions for 2012/13 cancelled as per Financial Regulation F5(a)		
	Cote d'Ivoire	(11,745)
	Dominica	(4,350)
	Gambia, The	(4,350)
	Guatemala	(7,830)
	Kenya	(7,830)
	Nicaragua	(4,350)
	Romania	(7,830)
	Senegal	(4,350)
Total net Financial Contributions receivable for the Financial Year 2012/13		1,571,338

Appendix 2
Analysis of Voluntary Contributions received in 2012/13

Donor	Amount (£)	Purpose
Government of USA	6,320	Contribution towards funding for Invited Participants attending the small cetaceans sub-committee meeting
WSPA	9,935	Contribution towards the Entanglement training Workshop, Ecuador
NRDC	2,929	Contribution towards the Entanglement training Workshop, Mexico, January 2014
Exxon	30,945	Contribution towards ISRP scientific investigation of 2008 mass stranding melon-headed whales, Madagascar
NOAA	6,154	Contribution towards ISRP scientific investigation of 2008 mass stranding melon-headed whales, Madagascar
UNEP-SPAW-CEP	6,086	Contribution towards the large whale entanglement training Workshop, La Paz, November 2012
EIA	5,000	Contribution towards the marine debris and cetacean Workshop, USA, May 2013
Government of UK	10,000	Contribution towards the marine debris and cetacean Workshop, USA, May 2013
Marine Mammal Commission	3,265	Contribution towards the marine debris and cetacean Workshop, USA, May 2013
NOAA	3,280	Contribution towards the marine debris and cetacean Workshop, USA, May 2013
Government of Netherlands	19,324	Contribution towards the Small Cetaceans Fund
Government of USA	17,754	Contribution towards the whalewatching Workshop, Brisbane, May 2013
Government of USA	7,249	Contribution towards training for large whale entanglement response team
Ministry of Environment and Protection of Land and Sea, Italy	23,014	Satellite telemetry applied to whales in the Mediterranean Sea (contract)
IUCN	168,645	Western gray whale satellite tagging programme agreement
	319,900	

Appendix 3
Segmented Income and Expenditure Account

Year Ended 31 August 2013	Administration £	Whaling £	Conservation £	Data archiving £	Communications £	Total £
INCOME: continuing operations						
Contributions from Member Governments						1,571,338
Interest on overdue financial contributions						8,341
Voluntary contributions for all Funds						319,900
Sales of publications						8,510
Sales of sponsored publications						209
Observers' registration fees						(550)
UK taxes recoverable						19,094
Staff assessments						170,254
Interest receivable						7,078
Sundry income						60
						2,104,234
EXPENDITURE						
Secretariat	480,749	62,996	126,420	145,303	238,284	1,053,752
Publications	-	-	-	-	16,130	16,130
Annual meetings	73,894	4,361	2,215	17,609	27,944	126,023
Other meetings	1,529	-	1,900	-	-	3,430
Research expenditure	1,656	115,838	259,246	32,060	-	408,799
Small cetaceans	-	-	73,535	-	-	73,535
Southern Ocean Research Partnership (voluntary fund)	-	-	111,473	-	-	111,473
Conservation Management Plan fund	-	-	15,479	-	-	15,479
Operations (voluntary fund)	-	-	-	-	-	-
IWC - other work fund	-	-	151,785	-	-	151,785
Gray whale tagging (voluntary fund)	-	-	130,351	-	-	130,351
	557,828	183,195	872,404	194,973	282,358	2,090,757
Provisions made for:						
Unpaid contributions						14,796
Unpaid interest on overdue contributions						8,341
Dilapidations						30,000
Severance pay						27,800
Other doubtful debts						(13)
						2,171,681
(Deficit)/surplus for the year before transfers						(67,448)
Net transfers to/(from) income and expenditure account						
Publications fund						(215)
Research fund						75,383
Small cetaceans fund						47,847
Annual Meeting fund						(135,977)
Southern Ocean Research Partnership fund						111,409
Conservation Management Plan fund						15,360
Operations fund						-
IWC - other work fund						40,459
Gray whale tagging fund						(38,290)
Surplus for the year after transfers						48,527

Financial Statements for the Year ended 31 August 2014

Financial Statement for the year ended 31 August 2014

Statement of the Secretary's Responsibilities

The financial responsibilities of the Secretary to the Commission are set out in its Rules of Procedure and Financial Regulations. Fulfilment of those responsibilities requires the Secretary to prepare financial statements for each financial year which set out the state of affairs of the Commission as at the end of the financial year and the surplus or deficit of the Commission for that period. In preparing those financial statements, the Secretary should:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and estimates that are reasonable and prudent;
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Commission will continue in operation.

The Secretary is responsible for keeping adequate accounting records which disclose with reasonable accuracy at any time the financial position of the Commission. The Secretary is also responsible for safeguarding the assets of the Commission and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Independent Auditors' Report to the Commission

We have audited the financial statements of the International Whaling Commission for the year ended 31 August 2014 which comprise the accounting policies, the income and expenditure account, the analysis of expenditure, the balance sheet and the related notes on the following pages. These financial statements have been prepared under the accounting policies set out therein. This report is made solely to the Commission. Our audit work has been undertaken so that we might state to the Commission those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Commission for our audit work, for this report, or for the opinions we have formed.

Respective Responsibilities of the Secretary and Auditors

As described in the statement of the Secretary's responsibilities, the Secretary is responsible for the preparation of financial statements.

Neither statute nor the Commission has prescribed that the financial statements should give a true and fair view of the Commission's state of affairs at the end of each year within the specialised meaning of that expression in relation to financial statements. This recognised terminology signifies in accounting terms that statements are generally accepted as true and fair only if they comply in all material aspects with accepted accounting principles. These are embodied in accounting standards issued by the Accounting Standards Board. The Commission has adopted certain accounting policies which represent departures from accounting standards:

- fixed assets are not capitalised within the Commission's accounts. Instead fixed assets are charged to the income and expenditure account in the year of acquisition. Hence, the residual values of the furniture, fixtures and fittings and equipment are not reflected in the accounts;
- publications stocks are charged to the income and expenditure account in the year of acquisition and their year end valuation is not reflected in the accounts.
- provision is made for the severance pay which would be payable should the Commission cease to function.

This is permissible as the financial statements are not required to give a true and fair view.

It is our responsibility to form an independent opinion, based on our audit, on those statements and to report our opinion to you. We also report if the Commission has not kept proper accounting records or if we have not received all the information and explanations we require for our audit.

Basis of Opinion

We conducted our audit in accordance with International Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the Secretary in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Commission's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement whether caused by fraud or other irregularity or error. In forming our opinion, we also evaluated the overall adequacy of the presentation of information in the financial statements.

Added Emphasis

In forming our opinion we have taken account of the absence of a requirement for the financial statements to give a true and fair view as described above.

Opinion

In our opinion the financial statements have been properly prepared in accordance with the accounting policies and present a proper record of the transactions of the Commission for the year ended 31 August 2014.

Anthony Wright (Senior Statutory Auditor)
For and on behalf of **Thomas Quinn Chartered Accountants**
15 Station Road, St Ives, Cambridgeshire, PE27 5BH
18 February 2015

Accounting Policies - Year Ended 31 August 2014

The accounting policies adopted by the Commission in the preparation of these financial statements are as set out below. The departures from generally accepted accounting practice are considered not to be significant for the reasons stated.

Convention

These accounts are prepared under the historical cost convention (i.e. assets and liabilities are stated at cost and not re-valued).

Fixed Assets

The full cost of furniture and equipment is written off in the income and expenditure account in the year in which it is incurred. The total cost of equipment owned by the Commission amounts to £163,023 and its realisable value is not considered to be significant. Proposed expenditure on new items is included in budgets and raised by contributions for the year.

Publications

The full cost of printing publications is written off in the year. No account is taken of stocks which remain unsold at the balance sheet date. Most sales occur shortly after publication and so stock levels held are mainly made up of old unsold stock-which is unlikely to result in many sales, consequently their net realisable value is not significant.

Severance Pay Provision

The Commission provides for an indemnity to members of staff in the event of their appointment being terminated on the abolition of their posts. The indemnity varies according to length of service and therefore an annual provision is made to bring the total provision up to the maximum liability. This liability is calculated after adjusting for staff assessments since they would not form part of the Commission's liability.

Interest on Overdue Contributions

Interest is included in the income and expenditure account on the accruals basis and provision is made where its recoverability is in doubt.

Leases

The costs of operating leases are charged to the income and expenditure account as they fall due for payment.

Foreign Exchange

Transactions dominated in foreign currencies are translated into sterling at the rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated at the rate ruling at that date. These translation differences are dealt with in the income and expenditure account.

Retirement Benefits Scheme

The Commission operates a defined contribution retirement benefits scheme. The costs represent the amount of the Commission's contributions payable to the scheme in respect of the accounting period.

Income and Expenditure Account (Year Ended 31 August 2014)

	[Note]	2014 £	£	2013 £	£
INCOME: continuing operations					
Contributions from member governments	[App 1]		1,583,141		1,571,339
Interest on overdue financial contributions			9,709		8,341
Voluntary contributions for all Funds	[App 2]		292,580		319,900
Sales of publications			1,610		8,510
Sales of sponsored publications/(cancelled invoices)			(120)		208
Observers' registration fees			42,235		(550)
UK taxes recoverable			8,563		19,094
Staff assessments			173,508		170,254
Interest receivable			11,503		7,078
Sundry income			-		60
			2,122,729		2,104,234
Expenditure					
Secretariat	[1]	1,094,989		1,053,752	
Publications	[2]	5,786		16,130	
Annual meetings		2,160		126,023	
Scientific meetings		142,840		-	
Biennial meetings		199,947		-	
Other meetings		3,775		3,430	
Research expenditure	[3]	330,147		408,799	
Small cetaceans	[4]	91,266		73,535	
Southern Ocean Research Partnership (voluntary fund)	[5]	14,094		111,473	
Conservation Management Plan fund	[6]	29,527		15,479	
IWC - other work fund	[7]	204,063		151,785	
Gray whale tagging (voluntary fund)	[8]	23,987		130,351	
		2,142,579		2,090,757	
Provisions made for:					
Unpaid contributions		(26,370)		14,796	
Unpaid interest on overdue contributions		9,709		8,341	
Dilapidations		2,004		30,000	
Severance pay	[19]	30,500		27,800	
Other doubtful debts		5		(13)	
			2,158,427		2,171,681
(Deficit)/surplus for the year before transfers			(35,698)		(67,448)
Net transfers to/(from) Income and Expenditure Account					
Publications fund	[9]	(127)		(215)	
Research fund	[10]	(4,036)		75,383	
Small cetaceans fund	[11]	39,181		47,847	
Meeting fund	[12]	39,947		(135,977)	
Southern Ocean Research Partnership fund	[13]	13,989		111,409	
Conservation Management Plan fund	[14]	28,190		15,360	
Operations fund	[15]	-		-	
IWC - other work fund	[16]	(21,728)		40,459	
Gray whale tagging fund	[17]	23,987		(38,290)	
			119,403		115,975
Surplus for the year after transfers			83,704		48,527

There are no recognised gains or losses for the current financial year and the preceding financial year other than as stated in the income and expenditure account.

Analysis of Expenditure (Year Ended 31 August 2014)

		2014 £	2013 £
1	**SECRETARIAT**		
	Salaries, national insurance and allowances	719,224	689,742
	Retirement and other benefit schemes	158,473	137,638
	Travelling expenses	27,727	16,880
	Office rent, heating and maintenance	92,551	95,984
	Insurance	5,524	4,948
	Postage and telecommunications	15,789	15,623
	Office equipment and consumables	35,786	50,796
	Professional fees	25,391	37,353
	Training and recruitment	1,722	5,045
	Archive uploading to website	11,979	423
	Other including exchange differences	824	(679)
		1,094,989	1,053,752
2	**PUBLICATIONS**		
	Annual Report	-	2,185
	Journal Cetacean Research and Management	5,786	13,945
		5,786	16,130
3	**RESEARCH**		
	Invited Participants	50,225	80,759
	IA - Simulated minke whale line transect data (Smith)	-	5,000
	IA - IDRC/SOWER biopsy and photo-ID database	517	11,288
	IA - Abundance estimation of Antarctic minke using SOWER data	722	-
	Western North Pacific minke whales: Workshop.	-	21,534
	IA - Statistical catch-at-age Est for Antarctic minke whales	12,500	5,614
	SH - Antarctic humpback whale catalogue	14,333	24,667
	SH - Blue whales photo-ID catalogue	5,000	3,000
	IWC global ship strike database	91	605
	SOCER State of the Cetacean Environment Report	4,000	2,618
	Pollution 2020	13,000	45,000
	E - Website/listserve/communication tool cetacean disease	1,000	3,400
	E - Marine debris pre-meeting (Simmonds)	24,655	24,753
	E - IWC/IQOE Workshop soundfields - global soundscape modelling	19,702	-
	E6 - Climate change Workshop	3,231	-
	AWMP - developers fund (Donovan)	14,708	13,454
	BC - Ship strike database coordinator	11,000	7,000
	Workshop on Greenland hunts	8,359	7,635
	AWMP - Greenland humpback/bowhead modelling (Punt)	-	5,000
	SP - JARPN II review Workshop	21,456	-
	SP - Icelandic SP review Workshop	390	14,798
	SH - Humpback whales: assessment model development	3,500	7,631
	SH - Antarctic blue whales photo-matching (Olson)	5,000	3,000
	Past cruise analysis and future cruise expenses	52,133	40,994
	RMP - Workshop on North Atlantic fin whales £4k	4,000	-
	RMP - N Atlantic minke whale pre-meeting and Workshop £12k	9,830	-
	RMP - Audit western North Pacific Bryde's whale survey data	-	2,000
	Review and guidelines for line transect abundance estimates (Hedley)	5,000	-
	RMP - Simulations genetic clustering (Palsbøll) £15k	15,000	-
	RMP - MSYR review Workshop	-	8,325
	RMP - Computing support	10,447	29,001
	BRG - Southern Ocean right whale photo-ID catalogue	-	3,000
	RMP - (SC) Intersessional	-	72
	Pacific wide study on population structure and movement patterns	-	9,000
	BRG - Right whale survey (Best)	-	21,730
	BRG - Gray whale rangewide Workshop £10k	10,834	-
	Southern right whale kelp gull Workshop	7,298	-
	Intersessional Workshop - Guidelines for the analysis of population genetic data and genetic data quality control	-	1,462
	SD - TOSSM project	-	433
	WW - LaWE Steering Group meeting	-	870
	WW - Guidelines and training in Oman (Baldwin)	-	3,500
	Other including exchange differences	2,215	1,656
		330,147	408,799
4	**SMALL CETACEANS**		
	SM Invited Participants	13,649	5,940
	Franciscanas abundance estimate	-	7,738
	Indo-Pacific humpback and bottlenose dolphins	11,526	11,187
	Abundance and distribution of the Atlantic humpback dolphin in Gabon and Congo(Collins; 1 year; £27,900)	-	6,975

Cont.

4 cont.	**SMALL CETACEANS**		
	Population ID and conservation Indo-Pacific humpback dolphin Bangladesh	-	9,510
	Photo-ID east Taiwan Strait population of Indo-Pacific humpback dolphins (*S. chinensis*) (Wang; 2 years; £32,500)	6,500	9,750
	Assess genetics and demography- dolphins taken in traditional drive-hunt in the Solomon Islands	2,825	4,238
	Assess threat re: coastal cetacean populations in Sarawak, Malaysia (Minton; 1 year; £20,440)	-	5,110
	Assess alternative fishing gears to avoid bycatch of vaquita in the Upper Gulf of California, Mexico (1 year; £33,270)	-	8,318
	2013/14 SM species affected by catches in North Pacific (Chen)	1,517	4,553
	Cetacean abundance surveys SE Asia (Mustika; £15k)	15,039	(39)
	SM 2013/14 Ganges River dolphin (Wakid; £20k)	15,000	-
	2013/14 Ganges River dolphin (Kelkar; £11k)	8,250	-
	Defining the units of conservation and historic population dynamics for two small cetacean species affected by directed and incidental catches in the North Pacific	11,500	-
	SM small cetaceans aerial survey of sea turtles in Adriatic Sea	5,237	-
	Other including exchange differences	222	255
		91,266	73,535
5	**SOUTHERN OCEAN RESEARCH PARTNERSHIP**		
	Foraging ecology and predator-prey interactions. Baleen whales and krill: study across Antarctica (Part 2 - Coordinator's salary) (Friedlaender)	-	2,925
	Migration and mixing humpback whale – East Australia and Oceania (Coordinator's salary) (Segedin)	-	3,904
	Study distribution, relative abundance, migration patterns and foraging ecology of 3 ecotypes of killer whales in Antarctic and adjacent waters (Dalla Rosa) (Part 2 - Coordinator's salary)	-	764
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean: data analysis (for analysis salary) (Adams)	-	625
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean: Coordinator and analysis salary (Stafford)	-	3,625
	Acoustic trends in abundance, distribution, and seasonal presence of blue and fin whales in the Southern Ocean. £7,800 (Steering Group meeting); + £8,125 (Coordinator and salary for analysis) (Samaran)	-	3,992
	South African blue whale project (Best)	-	2,519
	Antarctic blue whale project (Wadley)	-	11,705
	Killer whales (Pitman)	-	12,595
	Baleen whales (Friedlaender)	-	13,945
	Blue and fin whale acoustics (Stafford)	-	5,015
	Blue and fin whale acoustics (Samaran)	8,011	18,900
	Humpback whales (Constantine)	-	15,942
	Foraging range sub-Antarctic killer whales (De Druyn)	-	15,015
	2013/14 SH humpback whales Antarctica (Constantine; £8k)	6,000	-
	Other including exchange differences	82	-
		14,094	111,473
6	**CONSERVATION MANAGEMENT PLAN**		
	SW Atlantic southern right whale meeting in Buenos Aires, April 2013	-	5,479
	Steering Committee travel	-	2,000
	Southwest Atlantic southern right whale CMP coordinator (Iñíguez)	22,000	8,000
	Western North Pacific gray whale CMP coordinator (Ilyashenko)	7,309	-
	Other including exchange differences	218	-
		29,527	15,479
7	**IWC - OTHER WORK FUND**		
	Reduction in conflict between cetaceans and ships etc. Entanglement Workshop 2	5,521	38,250
	North Pacific gray whale *Implementation Review*	-	5,868
	Western gray whale photo-catalogue (Calambokidis) Tsf VC6.2+VC14.2->VC30	-	315
	ISRP stranding melon-headed whales, Madagascar	-	37,819
	Satellite telemetry whales Mediterranean Sea 2013 (Italy VC)	-	23,043
	Euthanasia Workshop, London, September 2013	16,360	-
	Aerial surveys in central and S Tyrrhenian Sea	91,718	-
	Entanglement Workshop, November 2013, St Martin and January 2014, Mexico	17,595	-
	Workshop anthropogenic impacts on cetaceans in Arctic	34,808	-
	2014 guest editor seismic survey gray whales (Reeves £8,733)	6,570	-
	IWC/UNEP/SPAW ship strikes/disentangle Workshop, Caribbean, Panama	31,490	-
	Whalewatching Workshop, Argentina	-	46,170
	IWC-ACCOBANS, joint Workshop, ship strikes, Monaco	-	320
		204,063	151,785
8	**GRAY WHALE TAGGING**		
	GWT expenditure (VC funded)	23,987	130,351
		23,987	130,351

Balance Sheet as at 31 August 2014

	[Note]	£	2014 £	£	2013 £
Cash on short term deposit		2,366,141		2,474,564	
Cash at bank on current account		1,017		1,219	
			2,367,158		2,475,783
Outstanding contributions from members including interest		648,520		533,387	
Less provision for doubtful debts		(509,527)		(526,026)	
			138,993		7,360
Other debtors and prepayments		34,568		91,850	
Less provision for other doubtful debts		-		-	
			34,568		91,850
			2,540,719		2,574,993
CREDITORS:					
Amounts falling due within one year	20		(195,532)		(226,613)
NET CURRENT ASSETS			2,345,187		2,348,380
PROVISION FOR SEVERANCE PAY	19		(422,200)		(391,700)
PROVISION FOR DILAPIDATIONS			(32,004)		(30,000)
			1,890,983		1,926,680
FINANCED BY					
Publications fund	9		41,428		41,301
Research fund	10		310,438		306,402
Small cetaceans fund	11		43,233		82,414
Meeting fund	12		81,475		121,421
Southern Ocean Research Partnership fund	13		3,529		17,518
Conservation Management Plan fund	14		195,813		224,003
Operations fund	15		23,288		23,288
IWC - other work fund	16		73,060		51,332
Gray whale tagging fund	17		7,213		31,200
General fund	18		1,111,506		1,027,801
	21		1,890,983		1,926,680

Approved on behalf of the Commission
Simon Brockington (Secretary)
Dated: 18 February 2015

Notes to the Accounts (Year Ended 31 August 2014)

	2013 £	2014 £
9 Publications fund		
Interest receivable	247	7
Cancelled invoices	(120)	208
Net transfers (to)/from income and expenditure account	127	215
Opening balance as at 01 September 2013	41,301	41,086
Closing balance as at 31 August 2014	41,428	41,301
10 Research fund		
Allocation for research	315,800	314,984
Voluntary contributions received	16,554	21,544
Interest receivable	1,829	145
Reallocation	-	(3,256)
Expenditure	(330,147)	(408,799)
Net transfers (to)/from income and expenditure account	4,036	(75,383)
Opening balance as at 01 September 2013	306,402	381,785
Closing balance as at 31 August 2014	310,438	306,402
11 Small cetaceans fund		
Allocation for small cetaceans	-	-
Voluntary contributions received	51,593	25,644
Interest receivable	492	43
Expenditure	(91,266)	(73,535)
Net transfers (to)/from income and expenditure account	(39,181)	(47,847)
Opening balance as at 01 September 2013	82,414	130,262
Closing balance as at 31 August 2014	43,233	82,414
12 Meeting fund		
Allocation for meetings	305,000	262,000
Voluntary contributions received	-	-
Expenditure	(344,947)	(126,023)
Net transfers (to)/from income and expenditure account	(39,947)	135,977
Opening balance as at 01 September 2013	121,421	(14,556)
Closing balance as at 31 August 2014	81,475	121,421
13 Southern Ocean Research Partnership fund		
Allocation for research	-	-
Voluntary contributions received	-	-
Interest receivable	105	64
Expenditure	(14,094)	(111,473)
Net transfers (to)/from income and expenditure account	(13,989)	(111,409)
Opening balance as at 01 September 2013	17,518	128,926
Closing balance as at 31 August 2014	3,529	17,518
14 Conservation Management Plan fund		
Interest receivable	1,337	119
Expenditure	(29,527)	(15,479)
Net transfers (to)/from income and expenditure account	(28,190)	(15,360)
Opening balance as at 01 September 2013	224,003	239,362
Closing balance as at 31 August 2014	195,813	224,003

	2013 £	2014 £
15 Operations fund		
Allocation for other work	-	-
Net transfers (to)/from income and expenditure account	-	-
Opening balance as at 01 September 2013	23,288	23,288
Closing balance as at 31 August 2014	23,288	23,288
16 IWC - other work fund		
Voluntary contributions received	224,434	104,070
Interest receivable	1,357	-
Expenditure	(204,063)	(151,785)
Allocation for research	-	-
Allocation for other work	-	-
Reallocation	-	7,257
Net transfers (to)/from income and expenditure account	21,728	(40,459)
Opening balance as at 01 September 2013	51,332	91,790
Closing balance as at 31 August 2014	73,060	51,332
17 Gray whale tagging fund		
Voluntary contributions received	-	168,641
Expenditure	(23,987)	(130,351)
Net transfers (to)/from income and expenditure account	(23,987)	38,290
Opening balance as at 01 September 2013	31,200	(7,090)
Closing balance as at 31 August 2014	7,213	31,200
18 General fund		
Opening balance as at 01 September 2013	1,027,801	979,274
Net transfers (to)/from income and expenditure account	83,704	48,527
Closing balance as at 31 August 2014	1,111,506	1,027,801
19 Provision for severance pay		
Opening balance as at 01 September 2013	391,700	363,900
Net transfers (to)/from income and expenditure account	30,500	27,800
Closing balance as at 31 August 2014	422,200	391,700
20 Creditors: amounts falling due within one year		
Deferred contributions income	28,229	80,334
Other creditors and accruals	167,303	146,279
Closing balance as at 31 August 2014	195,532	226,613
21 Reconciliation of movement in funds		
Excess (surplus) of expenditure over income	(35,698)	(67,448)
Opening funds	2,062,381	2,129,829
Closing funds	2,026,683	2,062,381

22 Financial commitments

The Commission had annual commitments at 31 August 2014 under non-cancellable operating leases as set out below and which expire:

	2014		2013	
	Land and buildings £	Office equipment £	Land and buildings £	Office equipment £
Within 2 to 5 years	60,000	7,142	60,000	23,015

The lease on the IWC Secretariat Offices was renewed from 18 March 2009 for 10 years, with an option to break after 5 years.

Appendix 1

Financial Contributions for the Year Ended 31 August 2014

Line No.	Country	Financial Contribution
1	Antigua and Barbuda	6,628
2	Argentina	11,931
3	Australia	35,158
4	Austria	23,374
5	Belgium	23,374
6	Belize	4,419
7	Benin	6,628
8	Brazil	11,931
9	Bulgaria	7,954
10	Cambodia	6,628
11	Cameroon	7,954
12	Chile	11,931
13	China, P.R of	11,931
14	Colombia	11,931
15	Congo, Rep	4,419
16	Costa Rica	11,931
17	Cote d'Ivoire	11,931
18	Croatia	17,482
19	Cyprus	23,374
20	Czech Republic	23,374
21	Denmark	54,223
22	Dominica	4,419
23	Dominican Republic	11,931
24	Ecuador	11,931
25	Eritrea	4,419
26	Estonia	23,374
27	Finland	23,374
28	France	55,123
29	Gabon	6,628
30	Gambia, The	4,419
31	Germany	55,123
32	Ghana	11,931
33	Grenada	6,628
34	Guatemala	7,954
35	Guinea	6,628
36	Guinea-Bissau	6,628
37	Hungary	7,954
38	Iceland	54,223
39	India	11,931
40	Ireland	23,374
41	Israel	23,374
42	Italy	61,015
43	Japan	127,215
44	Kenya	7,954

Line No.	Country	Financial Contribution
45	Kiribati	6,628
46	Korea, Rep of	29,266
47	Lao PDR	6,628
48	Lithuania	7,954
49	Luxembourg	23,374
50	Mali	4,419
51	Marshall Islands	4,419
52	Mauritania	6,628
53	Mexico	11,931
54	Monaco	11,931
55	Mongolia	6,628
56	Morocco	11,931
57	Nauru	6,628
58	Netherlands	23,374
59	New Zealand	23,374
60	Nicaragua	4,419
61	Norway	54,223
62	Oman	23,374
63	Palau	6,628
64	Panama	15,908
65	Peru	11,931
66	Poland	11,931
67	Portugal	17,482
68	Romania	7,954
69	Russian Federation	27,167
70	San Marino	7,954
71	Senegal	4,419
72	Slovak Republic	17,482
73	Slovenia	23,374
74	Solomon Islands	4,419
75	South Africa	11,931
76	Spain	55,123
77	St Kitts and Nevis	6,628
78	St Vincent and The Grenadines	6,628
79	St Lucia	6,628
80	Suriname	4,419
81	Sweden	23,374
82	Switzerland	23,374
83	Tanzania	11,931
84	Togo	6,628
85	Tuvalu	6,628
86	United Kingdom	66,907
87	Uruguay	11,931
88	USA	85,972

Total originally requested from Contracting Governments	Total	1,637,936
Less Financial Contributions for 2013/14 cancelled as per Financial Regulation F5(a)		
	Belize	(4,419)
	Congo, Rep	(4,419)
	Dominica	(4,419)
	Gambia, The	(4,419)
	Guatemala	(7,954)
	Kenya	(7,954)
	Nicaragua	(4,419)
	Romania	(7,954)
	Senegal	(4,419)
	Suriname	(4,419)
Total net Financial Contributions receivable for the Financial Year 2013/14		1,583,141

Appendix 2

Analysis of Voluntary Contributions received in 2013/14

Donor	Amount (£)	Purpose
Government of UK	20,000	Small cetaceans including attendance at SC meetings
Scientific Committee on Oceanic Research (SCOR)/Partnership for Observations of the Global Ocean (POGO)	4,834	71517RES: 2014 IWC/IQOE soundscape modelling Workshop
Government of USA	2,894	71516RES: Marine debris and cetacean Workshops May 2013 (USA) and July 2014 (Hawaii)
ISPRA	2,377	73313SMA: Small cetaceans aerial survey for sea turtles in the Adriatic Sea
ISPRA	9,751	73313SMA: Small cetaceans aerial survey for sea turtles in the Adriatic Sea
Government of Italy	12,393	Contribution to the Small Cetacean Voluntary Fund
Government of USA	2,500	SC/65a Invited Participants expenses contribution
Government of USA	6,325	71517RES: 2014 IWC/IQOE soundscape modelling Workshop - funding for participant travel
Government of USA	28,416	Whalewatching Workshop, Brisbane, 24-26 May 2013
Government of UK	10,000	Welfare initiative: impacts of marine debris and entanglement of cetaceans
Corlido Trading House SADH (Shell)	8,733	75311GFVNS: Guest editor of a special theme issue of *Endangered Species Research* on the 'Mitigation and Monitoring of a 4-D Seismic Survey in the vicinity of a Critically Endangered Population of Gray Whales'
WSPA	8,075	Entanglement training Workshop, Dominican Republic, 2014 and custom tool kit
Government of Netherlands	20,264	UNEP-SPAW ship strikes/disentanglement wider Caribbean Workshop, Panama, 18-20 June 2014
Government of USA	12,091	Second entanglement response training Workshop, St Martin, November 2013
Exxon	720	ISRP scientific investigation of 2008 mass stranding of melon-headed whales in Madagascar - contribution towards report translation costs
Government of Norway	9,996	IWC Workshop on euthanasia protocols to optimise concerns for stranded cetaceans
Government of Italy	90,981	Investigating unusual mortality of cetaceans mainly striped dolphins during Jan.-Apr. 2013 along Italian coast
Government of USA	12,769	UNEP-SPAW ship strikes/disentanglement wider Caribbean Workshop, Panama, 18-20 June 2014
Government of USA	14,554	Travel funding for a limited number of native hunters needing assistance to attend ASWWG meeting
WAP (WSPA)	2,041	Tonga disentanglement training, July 2014
SPAW	5,797	Voluntary contribution towards 75312 UNEP-SPAW ship strikes/disentanglement wider Caribbean Workshop, Panama, 18-20 June 2014
WWF	3,178	Contribution to the Small Cetacean Voluntary Fund
Government of Netherlands	3,889	73200SMA: Small cetacean IP fund 2015
	292,580	

Appendix 3

Segmented Income and Expenditure Account (Year Ended 31 August 2014)

	Admini-stration	Whaling	Conserva-tion	Data archiving	Communi-cations	Total	
INCOME: continuing operations	**£**	**£**	**£**	**£**	**£**	**£**	
Contributions from member governments						1,583,141	
Interest on overdue financial contributions						9,709	
Voluntary contributions for all Funds						292,580	
Sales of publications						1,610	
Sales of sponsored publications						(120)	
Observers' registration fees						42,235	
UK taxes recoverable						8,563	
Staff assessments						173,508	
Interest receivable						11,503	
Sundry income						-	
						2,122,729	
Expenditure							
Secretariat	499,905	70,919	82,751	152,802	288,612	1,094,989	T
Publications	-	-	-	-	5,786	5,786	TRUE
Annual meetings	2,160	-	-	-	-	2,160	TRUE
Scientific meetings	108,152	2,296	2,500	8,688	21,205	142,840	T
Biennial meetings	176,654	1,635	1,845	4,567	15,247	199,947	TRU
Other meetings	-	-	3,775	-	-	3,775	TRUE
Research expenditure	2,215	92,955	221,238	12,739	1,000	330,147	
Small cetaceans	222	-	91,044	-	-	91,266	TRUE
Southern Ocean Research Partnership (voluntary fund)	82	-	14,011	-	-	14,094	TRUE
Conservation Management Plan fund	218	-	29,309	-	-	29,527	TRUE
Operations (voluntary fund)	-	-	-	-	-	-	TRUE
IWC - other work fund	-	-	204,063	-	-	204,063	TRUE
Gray Whale Tagging (voluntary fund)	-	-	23,987	-	-	23,987	TRUE
	789,607	167,804	674,522	178,796	331,851	2,142,579	
Provisions made for:							
Unpaid contributions						(26,370)	
Unpaid interest on overdue contributions						9,709	
Dilapidations						2,004	
Severance pay						30,500	
Other doubtful debts						5	
						2,158,427	
(Deficit)/surplus for the year before transfers						(35,698)	
Net transfers to/(from) income and expenditure account							
Publications fund						(127)	TRUE
Research fund						(4,036)	TRUE
Small cetaceans fund						39,181	TRUE
Annual Meeting fund						39,947	TRUE
Southern Ocean Research Partnership fund						13,989	TRUE
Conservation Management Plan fund						28,190	TRUE
Operations fund						-	TRUE
IWC - other work fund						(21,728)	TRUE
Gray whale tagging fund						23,987	TRUE
SURPLUS FOR THE YEAR AFTER TRANSFERS						83,704	

Chair's Report of the 2013 IWC Bureau Meeting

3-4 September 2013, St Lucia

Chair's Report of the 2013 IWC Bureau Meeting

3-4 September 2013, Bay Gardens Hotel, St Lucia

This was the first 'in-person' meeting of the IWC's Bureau. The meeting was convened under Commission Rule of Procedure B.4 which states that the Bureau shall meet in those years in which the Commission does not meet, and shall otherwise meet as required to fulfil its functions in accordance with Rule M.9. The Chair of the Commission acted as Chair of the Bureau meeting.

1. WELCOME ADDRESS

Mr Vaughn Charles (St Lucia's Alternate Commissioner) called the meeting to order and presided over the opening ceremony and prayers. Welcoming remarks were provided by Dr Simon Brockington (Executive Secretary to the IWC) and the Hon. Moses Jn. Baptiste (Minister of Agriculture, Food Production, Fisheries and Rural Development, St. Lucia). The Vote of Thanks was given by Mrs Jeannine Compton-Antoine (Chair of the Commission).

A list of participants is given at Annex A.

2. APPOINTMENT OF RAPPORTEUR

The Secretary was appointed rapporteur.

3. ADOPTION OF AGENDA

The Commissioner for Australia recorded that the Australian government was in caretaker mode ahead of the federal election on 7 September 2013. This required Australia to only advocate existing policies and not bind any future government. This would not cause concern for the current meeting because the Australian Commissioner was present only in her role as Chair of the Commission's F&A Committee.

The Vice Chair of the Commission recorded that Belgium would hold elections in 2014 but that the outcome of the elections would not affect his position.

The adopted agenda is given at Annex B.

A list of documents is given at Annex C.

4. APPROVAL OF MINUTES FROM MARCH TELECONFERENCE

A range of editorial changes to the draft minutes of the teleconference held on 26 March 2013 (IWC/S13/BUR03) were proposed and **adopted**.

The Bureau discussed the reliability of international teleconferencing systems and **agreed** that if the system reliability was in question that a test should be conducted to ensure that all states, especially those in Africa, would be able to join successfully.

5. CONFIDENTIAL COMMUNICATIONS

Rule of Procedure P.3 requires the Secretary to report any confidential communications arising during the preceding year to the Bureau. He **reported** that there had been no confidential communications.

The Bureau discussed the reporting of confidential communications and **agreed** that the report requested at P.3 should be available to all Commission members rather than just to the Bureau. The meeting **requested** the Secretary to propose a change to Rule of Procedure P.3 at IWC/65 in 2014 so as to ensure the report of confidential communications would be available to all members.

6. BUREAU PROCEDURES

Members undertook an extensive discussion on how the Bureau should provide advice to the Chair and Vice-Chair of the Commission [hereafter Chair and Vice-Chair] so as to be consistent with the requirements of Rule of Procedure M.9. In particular the discussion included issues surrounding intersessional vacancies in Bureau membership, attendance at Bureau meetings, the process for provision of advice, regularity of Bureau meetings and notification of Bureau meetings to the IWC membership.

The outcome of the discussions was the development and **agreement** of a guidance document on Bureau Procedures. This document is given at Annex D.

7. FINANCIAL AFFAIRS

a. Provisional financial statement for the year ended 31 August 2013

The Bureau **received** the provisional financial statement for the year ended 31 August 2013 (document IWC/S13/BUR05) in accordance with the requirements of Financial Regulation D.1(c).

In discussion the Bureau **noted** that a total of £320,000 of voluntary contributions had been received. These were provided from various sources for work associated with *inter alia* tagging of western Pacific gray whales, for the small cetaceans conservation fund, for the workshops on marine debris and for the forthcoming Workshop on euthanasia protocols. The Secretary confirmed that a list of voluntary contributions and the donor governments and organisations would be provided in the audited accounts in the same way as in previous years.

b. Bureau process for receiving audited accounts

The Bureau **noted** that Financial Regulation C.5 states that the audited financial statement shall be submitted to the Bureau (the statement is also circulated to the entire Commission membership by the auditors). The Bureau **agreed** that its role was to provide any advice or comments to the Chair who would formally accept the statement on behalf of the Commission.

The Bureau discussed the format of the annual report in years when the Commission did not meet. It **agreed** that a management report should be produced to accompany the financial statements to provide an explanation of how the funds were obtained and disbursed and in so doing record the Commission's activity over the previous year. The Bureau **requested** the Secretary to develop a template for the Chair, Vice-Chair and Chairs of the Sub-committees to use to guide this report's production. The management report should be published in electronic form only.

c. Report on uncollected financial contributions and suspended votes

The Bureau **received** paper IWC/S13/BUR06 which was the Report on Collection of Financial Contributions for 2012-13. The paper showed that at 30 July 2013 a total of £535,846 was outstanding. The Bureau recalled the Budgetary Sub-committee's request for the Secretary to report at IWC/65 on additional measures to assist Contracting Governments in paying their arrears, and **agreed** the report was important. It

should include a description of the communication methods currently used by the Secretariat to recover payment arrears. It should also consider different methods of approach to Contracting Governments, perhaps to Finance Departments rather than Fishery or Environment Departments, and where appropriate through regional groupings of countries (including ATLAFCO on the western African coast). The Secretariat's communications should aim to establish why Contracting Governments are in arrears as this may identify a need for co-ordination within countries between the IWC contact point and the agency with financial authority. The communications should also identify the consequences of late payment so as to encourage payment. Additionally the effectiveness of Financial Regulation F.5(e) dealing with repayment schedules should be evaluated and, if necessary, any further options proposed.

The Bureau **noted** that the change of financial year (see item 7e below) may assist the prompt collection of payments since the Commission's financial year would operate simultaneously with that of the majority of Contracting Governments. The Bureau **expressed concern** that Contracting Governments should not be allowed to get into a situation where debts build up during the biennial period so that they become unable to pay ahead of a biennial meeting.

The Bureau **advised** that any communications between the Secretariat and Contracting Governments on recovery of arrears which are subsequently provided to the Budgetary Sub-committee shall remain confidential.

d. Budget for 2013-14 Financial Year

The Bureau **received** paper IWC/S13/BUR07 which was a review of the second half of the Commission's biennial budget. The Secretary indicated that financial expectations for the 2013-14 year were unchanged and that the budget continued to represent a reasonable forecast of the level of the general fund as at 31 August 2014. This view was based upon: (1) no increase in the level of debtors compared to levels in 2012-12; (2) no unforeseen expenditure associated with intersessional meetings; and (3) success in constraining costs of IWC/65 to budget in the possible absence of a host government.

The Bureau **noted** that the breakdown of items on the expenditure sheet did not clearly express the funds budgeted for the individual Scientific and Commission meetings, and **requested** that these be shown as individual items in future budget exercises. The Bureau also **noted** that future budgets will require four years of projections comprising the next biennial budget and the subsequent biennial forecast. In addition this will assist in showing how Contracting Government contributions are 'smoothed' so as to remain relatively constant between years when there is a Commission meeting compared to years when one does not take place.

The Bureau **noted** that member countries may move between Capacity to Pay groups (as used in the contributions formula) in the year when a meeting is not held and **advised** that the process to be applied to resolve this situation should be clarified. The Secretary indicated that the use of the World Bank deflator to correct the capacity to pay thresholds for inflation may also need revision. The Bureau **recommended** that investigation of these processes be taken forwards by the Budgetary Sub-committee intersessionally.

The Bureau referred to savings in printing and postal charges which may arise from electronic publication of the *Journal of Cetacean Research and Management*[1]. It **noted** the Scientific Committee's request that the Supplement to the *Journal* containing the Report of the Scientific Committee would continue to be made available in hard copy. The Secretary suggested further savings of around £2,000 to £3,000 would be possible if the Commission's Annual Report was produced in electronic format only.

The Bureau discussed the Commission's lease on its headquarters premises (the Red House) in Cambridge. It **noted** that the present lease was signed for ten years on 18 March 2009 and that a lease break was possible at the five year point (18 March 2014) although notice must be given by 17 September 2013. The Secretary noted that although the rental charges were competitive, the repair bills on the property were in excess of those which would be expected on more modern business premises. The Bureau **noted** the poor state of repair of the Red House and **advised** the Secretary to: (1) contact the landlord to see what, if anything, can be done to share the cost of the repairs or renovations under the terms of the commercial lease; and (2) to prioritise investigation of alternative options in the local Cambridge area, the financial implications of a move and any cost savings which may be possible. The non-financial benefits of a move such as modern office space, improved energy efficiency and a better working environment should also be emphasised.

e. Process for changing the financial year and effect on general reserve fund

The Bureau received paper IWC/S13/BUR08 which was a review of the options for enacting the change to the Commission's financial year. The paper focussed on how to deal with the four month 'bridging period' which would occur at the end of the next financial year and before the start of the new annual period (i.e. the four months between 1 September 2014 and 31 December 2014). At IWC/64 the Commission had agreed that the cost of the four month bridging period should be recovered over subsequent years, with some governments suggesting that a four year period (i.e. one year for each month) would be reasonable.

The Bureau **noted** that the cost associated with the four month period would be additional to what many Contracting Governments may already have budgeted for a standard 12 month year. Accordingly the Bureau **advised** that the Commission should be given as much notice as possible of need to budget for the four months bridging period, and as much flexibility in when to pay as possible. No suspension of vote should be caused by non-payment of the costs associated with the bridging period until the four year period had elapsed.

The Bureau **noted** that IWC/65 in September 2014 would need to agree: (1) the normal biennial budget covering 1 January 2014 to 31 December 2015; and (2) the costs associated with the four month bridging period.

Specifically, the Bureau **advised** that two invoices should be issued simultaneously after IWC/65. One should be a 12 month period covering 1 January 2014 to 31 December 2014 payable within six months in accordance with current rules of procedure. The other invoice should be for the four month bridging period payable by 30 June 2018 (i.e. four years from date of issue). The Bureau **advised** that this would allow some governments to pay the full amount associated with the bridging period immediately, while others may wish to pay a certain amount each year while still others may wish to defer payment until 2018. The Bureau also **noted** that the Inter-American Tropical Tuna Commission had recently changed its financial year and may be in a position to provide further guidance based upon its experiences.

[1] *J. Cetacean Res. Manage. (Suppl.)* 14: 80 [2013].

It **advised** the Secretary that the Commission would need to review these proposals, including any associated changes to the financial regulations at IWC/65 in 2014. It further **advised** that a letter of explanation should be provided to all Contracting Governments at the point when invoices were issued, and that Contracting Governments should be given the opportunity to express how they wished to pay the bridging invoice.

f. Process for Commission approval of research expenditure

The Bureau received paper IWC/S13/BUR09 which gave an update on progress for approval of the disbursement of the research budget. The paper recalled that the Commission had agreed an allocation of £315,800 for research for the financial year 1 September 2013 to 31 August 2014 when it had met at IWC/64 in July 2012. The Scientific Committee had proposed an allocation of those funds at its meeting in Korea in June 2013, and this proposal had been circulated to Contracting Governments through Circular Communication IWC.ALL.198 of 28 June 2013. Three responses from Contracting Governments had been received at the Secretariat which raised concerns with the proposed allocation.

The Bureau **advised** that the three letters received from Contracting Governments indicated there was no consensus agreement to proceed with the disbursement of the research budget. After an extensive evaluation of the available options the Bureau **advised** that in the long term:

- the Scientific Committee should be requested to provide its list of proposed expenditure in priority order, and that a two year work plan was required to be consistent with the Commission's meeting cycle;
- that the financial information provided to the Scientific Committee should include the amount budgeted for research, and also a balance sheet showing the level of funds remaining unspent from allocations in previous years; and
- that any unspent money from previous allocations, including those in the research fund, should be drawn to the attention of the Budgetary Sub-committee and thereby the Finance and Administration Committee so that those funds could be re-assigned by the Commission, either to further research or to other areas.

In the short term the Bureau considered that, in the absence of a Commission meeting, it was impractical to resolve the concerns expressed by the three countries and so it **advised** that: the Chair should write to each of the three countries with a request for them to withdraw their objections to the research allocation for the present year. The letters should refer to the impracticality of resolving the concerns in the absence of a Commission meeting and include a commitment to place the issue on the agenda of IWC/65; and if the countries did not wish to withdraw their objections the result would be either to suspend the research expenditure for the current year, or to move to a postal ballot to see if the Commission wished to proceed with the allocation as proposed by the Scientific Committee.

8. UPDATES ON INTERSESSIONAL WORK

The Bureau received papers IWC/S13/BUR10 and IWC/S13/BUR10a which gave updates on the Commission's intersessional work programme.

a. Aboriginal Subsistence Whaling

Aboriginal Subsistence Whaling in Greenland

The Bureau **noted** Circular Communication IWC.CCG.1064 of 3 July 2013 which contained a letter from the Government of Denmark regarding Aboriginal Subsistence Whaling. This letter indicated that unless a solution can be found which allows the Kingdom of Denmark to remain consistent with the requirements of the International Convention for the Regulation of Whaling then it intended to submit notification of withdrawal from the Convention before 1 January 2014 to be effective by 30 June 2014.

The Bureau had a full discussion of the various options to support the Chair and Vice-Chair in responding to the Kingdom of Denmark's letter. The Bureau **agreed** there was a general consensus that Contracting Governments wished to see Denmark remain within the Convention.

The Bureau considered whether it would be possible to request the Kingdom of Denmark to postpone its withdrawal until after the Commission was next expected to meet at IWC/65 in September/October 2014. This would allow all Contracting Parties to discuss the matter again, and would allow additional time for intersessional negotiations. However this request was considered inappropriate given the Kingdom of Denmark's expressed desire to move to a situation where it was compliant with its international obligations as soon as possible.

After an extensive discussion on alternative ways to move forward the Bureau **advised** the Chair and Vice-Chair to engage with Denmark and Greenland so as to develop an understanding of what would be required for an acceptable solution. In providing this advice the Bureau noted that there could be other issues beyond simple quota numbers where Denmark/Greenland may appreciate progress which may contribute to an overall resolution. The Bureau **advised** that there were funds available to support the Chair and Vice-Chair's costs in engaging in these discussions.

The Bureau **noted** paper IWC/S13/BUR11 and gave consideration as to how a decision on quotas could be made, if necessary, before IWC/65. It **noted** the difficulties associated with the current arrangement for postal ballots and **recommended** that the Working Group on Operational Effectiveness should add the procedures for intersessional decision making to its agenda. If an intersessional meeting was required the Bureau **advised** that it could be held at a location where there was a high concentration of diplomatic representation in order to allow Alternate Commissioners to be designated and hence to avoid issues with establishing a quorum.

Given the difficulties described above in taking a Commission decision intersessionally, the Bureau considered how to provide alternative advice to the Chair and Vice-Chair. In this regard the Bureau noted that although the Kingdom of Denmark was expected to submit its notice of withdrawal before 1 January 2014 the notice would not become effective until 30 June 2014. Given that the withdrawal notice could itself be withdrawn, one possibility might be that 30 June 2014 provided a more realistic deadline by which the current situation could be resolved.

In this light, the Bureau **advised** the Chair and Vice-Chair to work with Denmark and Greenland to undertake sufficient discussion and outreach so as to develop adequate confidence by 30 June 2014 that the situation was close to resolution. The Bureau considered that the Chair and Vice-Chair should work towards the development of a proposal by 30 June 2014 in time for the biennial meeting. This could take the form either of a draft Schedule Amendment

for adoption at IWC/65, or of an alternative which may be worth exploring such as a voluntary and temporary Code of Agreement which could allow Denmark to become compliant with its international obligations during the remainder of the intersessional period pending full resolution at IWC/65. If considered beneficial to discussions, the Bureau **advised** that a proposal or a voluntary Code of Agreement could be offered in the first instance by the Chair and Vice-Chair.

In this way, the Bureau believed it would be possible to develop reassurance that Denmark's difficulties were sufficiently close to resolution that it may wish to re-consider its withdrawal from the Convention.

The Bureau **noted** the importance of a co-ordinated European Commission position on reducing the timescales for gaining Commission agreement on Greenland progress. Accordingly it **advised** the Chair and Vice-Chair to work with those Contracting Governments who are members of the European Commission in developing their approach. It also **advised** the Chair and Vice-Chair to undertake outreach to all Contracting Parties regarding progress made.

The Bureau **noted** that the Commissioner for Denmark had recently written to the Chair requesting advice on the implementation of recent Scientific Committee advice relating to the Greenland harvest of minke whales. The Bureau **advised** the Chair to respond to the letter as to how the Scientific Committee's recommendations could be acted upon in the context of the above advice to assist Denmark in becoming compliant with its international obligations. The Bureau also **recommended** that on future occasions the Scientific Committee could be asked to provide a timescale by which their advice should be implemented.

Stinky gray whales

The Bureau discussed the placement of an agenda item to discuss interpretation of catch limits in regard to stinky whales and **advised** the Chair that the item could be heard as part of the discussions on North Pacific eastern stock of gray whales as part of the ASW Sub-committee's agenda.

b. Conservation Committee

The Bureau received document IWC/S13/BUR10a and **thanked** the Chair of the Conservation Committee for his time in producing the report. The Bureau **noted** that the summary of the Conservation Committee's workplan would be helpful in preparing the management report as discussed under Agenda Item 7b above.

c. Finance and Administration Committee

The Chair of the F&A Committee **noted** the summary of the Committee's work given in IWC/S13/BUR10 and drew attention to the need for an increase in membership of the Committee's working groups, especially those dealing with Strengthening of IWC Financing and Operational Effectiveness. The Correspondence Group on Strengthening Financing was developing a Resolution for adoption at IWC/65 and an increased membership would ensure that it was adequately scrutinised prior to presentation to the Commission. The Bureau **advised** the Chair to write to Contracting Governments to indicate the need to strengthen membership of these groups because they were developing proposals for the Commission's consideration. The Bureau further **advised** the Chair and Secretary to work through regional organisations (such as ATLAFCO), or focal points where appropriate to highlight the need for greater membership.

The Chair of the F&A Committee **notified** the Bureau that she would stand down from her second term as Chair at the end of IWC/65 in 2014. The Bureau **acknowledged** the need to establish a succession process, and **noted** that this may also extend to a number of other Commission officers and Bureau members.

d. Infractions Sub-committee

The Bureau **noted** that there was no requirement for the Infractions Sub-committee to work intersessionally and that it would next meet prior to IWC/65 in 2014.

e. Scientific Committee[2]

The Bureau **noted** the Scientific Committee meeting which had taken place at the invitation of the Republic of Korea in June 2014 and **thanked** all those who contributed to the successful outcome.

The Bureau **received** paper IWC/S13/BUR12 which contained proposed terms of reference for a review of the Scientific Committee's governance and procedures. The Secretary explained that the review had been requested by the Heads of Delegation to the Scientific Committee, and that subsequently three Contracting Governments had indicated that the review should ultimately be received by the Commission. Given the requests to present the review to the Commission the Secretary requested the Bureau's guidance on the entirety of the proposed terms of reference.

The Bureau discussed the current methods used by the Scientific Committee to allocate the research budget and to plan its work. As part of the discussion the Bureau **noted** the report of the 2012 Scientific Committee meeting which stated that changes to either the Convenors or Heads of Delegation roles were not required[3], and accordingly **noted** that the requirement for a review was a new development in 2013.

The Bureau **advised** the Secretary that any change to the Scientific Committee's terms of reference must be verified by the Commission. It further **advised** that at this stage the review should take an analytical form and document the existing practice of the Scientific Committee and compare it to the practices of other science committees, perhaps using a flow chart methodology. At this stage it would be inappropriate for the review to make recommendations, and its scope should be limited to highlighting areas which could be further investigated. The Scientific Committee's views on the analysis should be reported to the Commission as part of the review. The Secretary **undertook** to update IWC/S13/BUR12 in light of this advice.

f. Working Group on Whale Killing Methods and Associated Welfare Issues

The Bureau **noted** the summary of the Working Group's progress provided in IWC/S13/BUR10 and discussed arrangements for the proposed Workshop on ship strikes to be held in the second quarter of 2014 in conjunction with the Conservation Committee. The Chair of the Ship Strikes Working Group indicated that the Workshop was expected to be held in Panama and would comprise two back to back events, the first to examine ship strikes in the wider Caribbean region and the second to develop a strategic plan for the Commission's work on ship strikes.

The Bureau **noted** the advanced preparations for an IWC Workshop, co-funded by Norway and the United Kingdom, to develop protocols for dealing with euthanasia of large stranded cetaceans and wished the organisers a successful outcome.

[2]See also Agenda Item 7f in regards to the research fund.
[3]*J. Cetacean Res. Manage. (Suppl.)* 14: 79-80 [2013].

9. PREPARATION FOR IWC/65 IN 2014

a. Location, venue, date

The Bureau received paper IWC/S13/BUR13 which presented two venue options, both located in the UK, to accommodate IWC/65 in 2014 in the absence of a host government. The Bureau **recognised** that the UK Government did not wish to host IWC/65.

The Bureau questioned the Secretariat's practice of proposing UK meeting venues in years when no host government came forwards. While noting that a UK venue minimised the Secretariat's costs in transporting staff and equipment, the Bureau **advised** that this had the effect of 'cost shifting' the expense of travelling around the world onto Contracting Governments which were geographically distant from Europe such as those in South America, Asia and Oceania. The Bureau **requested** the Secretariat to research venues in other geographical regions, including in non-member countries, and in so doing to provide options for the IWC to rotate its meeting venues in years when host governments did not come forwards.

In addition, the Bureau **requested** the Secretariat to develop creative ways of reducing meeting costs. In particular the Bureau **advised** that registration and document services can be provided by local conference staff using specialist software packages, thus saving Secretariat travel and overtime charges. The Bureau further **requested** freight charges to be reduced by minimising the volume of material to be transported and to investigate alternative transport options including tendering of freight services. Such savings would also be beneficial to IWC host governments since it would clarify the extent of any financial commitment in acting as host.

Given the relatively short time period ahead of IWC/65 the Bureau **advised** the Secretariat to conduct further research at the two venues suggested in IWC/S13/BUR13 and report back in four weeks.

The Bureau **noted** that October 2014 was likely to be a busy period given Meetings of the Parties for CMS and CBD were already scheduled. After discussion, the Bureau **advised** that early September may provide a suitable time window (subject to venue availability), as long as the necessary separation between the Scientific Committee and Commission meetings could be achieved.

b. Duration (including length of sub-group meetings)

The Bureau **received** paper IWC/S13/BUR14 which proposed a timetable and duration for IWC/65 in 2014. The proposal was for an eight-day meeting, in contrast to the 12-day meeting schedule which was employed at IWC/64 in 2012. The eight day schedule could be achieved by removing one sub-committee day, shortening the plenary to four days and removing the two days for report preparation.

Recognising the need to reduce costs and increase efficiency the Bureau **advised** the Chair to adopt the eight-day meeting schedule.

The Bureau also **noted** that further efficiencies may be possible by dealing with Sub-committee material directly in plenary to save duplication of discussions and that this matter could be examined intersessionally by the Working Group on Operational Effectiveness. The Bureau **advised** that the assistance of specialist rapporteurs (as discussed under Item 9e below) during Sub-Committee week would be advantageous in expedient production of Sub-committee reports.

Given this change in schedule, the Bureau **advised** the Chair to provide a letter to Contracting Governments in the run-up to IWC/65 to explain how the meeting would be organised and why the changes to scheduling had been introduced.

c. Private Commissioners Meeting agenda for IWC/65

The Bureau received paper IWC/S13/BUR15 which contained a proposed agenda for the Private Commissioners' Meeting planned for immediately prior to IWC/65 in 2014. The Bureau **advised** that the purpose of the Private Commissioner's meeting was to assist the Chair and Vice-Chair facilitate full and open discussions during the plenary meeting of the Commission of important items on the Commission's agenda, in particular regarding proposed Resolutions or draft Schedule amendments. It also provided a forum to discuss items which were confidential, for example, the recruitment of senior staff to the Secretariat. Documents such as the status of the Convention and Draft List of Participants could be provided for background information but did not require an agenda item in their own right. The Bureau **advised** that issues such as scheduling of plenary sessions[4] and possibly oversight of credentials could be passed to the Bureau. Finally the Bureau **advised** that an item on 'Any Other Business' was required to allow Commissioners to highlight other issues of importance.

d. Development of IWC/65 agenda and timetable

The Bureau received paper IWC/S13/BUR16 which described options for developing the draft Agenda for IWC/65 in 2014. The Bureau recognised that the transition to biennial meetings and the separation of the Scientific Committee meeting from that of the Commission provided an opportunity to develop the efficiency and flow of the Commission's plenary meeting.

After extensive discussion the Bureau **recommended** that the agenda for IWC/65 be developed according to an 'action orientated' approach so that items which required a Commission decision (such as the adoption of Schedule Amendments or Resolutions) would be given priority on the agenda order. The Bureau **recommended** that duplicity in committee reporting to plenary should be reduced so as to make better use of the time available. The Bureau further **recommended** that the agenda should make clear on which day items will be opened in plenary so as to allow Ministers with limited time schedules to attend particular sessions.

To enact these recommendations, the Bureau **advised** the Chair to request the Secretary to produce an initial 100 day agenda in early June 2014 (i.e. after the close of the Scientific Committee meeting) for the Bureau's review. This agenda would contain items ordered according to: (1) whether a Commission decision was required; followed by (2) those items where a recommendation was proposed; and finally (3) items which required general discussion or were provided for information. Budget discussions would be scheduled towards the end of the meeting so as to take account of Commission decisions. Recognising that this style of Agenda would be a development of the IWC's current practice the Bureau **requested** the Chair and Secretary to develop a covering letter explaining the intention behind the new format. The Bureau **noted** that other IGOs regularly adopt strategic plans to assist with the process of prioritising work areas.

In order to reduce duplicity in reporting of committee work, the Bureau **advised** that the Scientific Committee should report its work on status of whale stocks early in

[4]See also Item 9d on scheduling.

the plenary proceedings. Work on other topics should be reported to the relevant Sub-committee who would then make management recommendations, based on science advice, into the plenary session.

The Bureau **noted** that paragraph 7b of the Schedule indicated that the prohibition of commercial whaling associated with the Southern Ocean Sanctuary shall be reviewed at ten year intervals. Given that this provision was adopted in 1994 and the first review took place in 2004, a second review is due in 2014. The Bureau **noted** that the Scientific Committee may wish to start its preparations for the review at its 2014 meeting and that the Chair should add this item to the Commission's agenda for IWC/65.

e. Process for accelerating the production of the Chair's Report

The Bureau received paper IWC/S13/BUR17 which was a proposal for increasing the efficiency of production for IWC meeting reports through the use of specialist rapporteurs.

The Bureau **noted** that the method proposed through IWC/S13/BUR17 worked efficiently during meetings of the Antarctic Treaty Consultative Meetings, but that it would have a cost implication if applied at IWC. The Bureau **emphasised** that the main requirement was for the plenary to adopt a record of its decisions, and **advised** the Secretary and Chair to provide such a record – in a similar style to the Summary of Main Outcomes, Decisions and Required Actions already produced – in a way which can be adopted by the plenary meeting as its last item. The record of decisions could be produced by specialist rapporteurs to ensure it would be ready for adoption by the plenary on the last day. The production and adoption by plenary of the record of decisions would satisfy the two month time requirement given at Rule of Procedure P.2.

The Bureau also discussed the utility of the Chair's Summary Report as currently produced. It **advised** that there was a need for a written record of the meeting, but that it could be shortened by removing the accounts of Sub-committee and Scientific Committee reports which are reproduced in full in other IWC publications. Further discussion on the length and detail of the Chair's Summary Report could be referred intersessionally to the Working Group on Operational Effectiveness.

10. SECRETARIAT

The USA was optimistic that it would be able to continue financial support of the Technical Advisor role on human impacts until September 2014. The USA requested the support of the Chair, Vice-Chair and Chair of F&A Committee in developing a process to propose the Technical Advisor role as a permanent role within the Secretariat from September 2014 onwards. The Bureau **advised** that Contracting Governments may be concerned over any rise in financial contributions which could result.

11. BUREAU

The Bureau agreed to meet by teleconference soon after the close of the 2014 Scientific Committee meeting to review progress and make preparations for the 100 day agenda for IWC/65.

In addition, the Bureau agreed to meet by teleconference again in 2013 should a need arise either to decide on a venue for IWC/65 or to review progress on negotiations with Denmark on Aboriginal Subsistence Whaling.

12. ANY OTHER BUSINESS

The Secretary proposed to increase the Commission's internal communications by providing a regular update every two months on intersessional working. The Bureau **agreed** with this suggestion and considered adding organisational communications to the agenda of its next meeting.

Bureau members thanked the Chair and the Government of St Lucia for hosting the meeting. The meeting closed at 16:00 hours on 4 September 2013.

Annex A

List of Participants

AUSTRALIA
Donna Petrachenko
Chair of the F&A Committee

BELGIUM
Frederic Chemay
Vice-Chair of the Commission

GHANA
Mike Akyeampong

JAPAN
Joji Morishita
Tatsuo Hirayama
Takeshi Kodo

PANAMA
Tomas Guardia

ST LUCIA
Jeannine Compton-Antoine
Chair of the Commission
Vaughn Charles
Rufus George
Thomas Nelson

USA
Ryan Wulff
Lisa Phelps
Roger Eckert
Melissa Garcia

SECRETARIAT
Simon Brockington
Julie Creek

Annex B

Adopted Agenda

1. Welcome from Chair
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Approval of minutes from March teleconference
5. Confidential communications
6. Bureau procedures
7. Financial affairs
   a. Provisional Financial Statement for the year ended 31 August 2013
   b. Bureau process for receiving audited accounts
   c. Report on uncollected financial contributions and suspended votes
   d. Budget for 2013-14 financial year
   e. Process for changing the financial year and effect on general reserve fund.
   f. Process for Commission approval of research expenditure
8. Updates on intersessional work
   a. Aboriginal Subsistence Whaling Sub-Committee
      Process for intersessional Commission decision making in anticipation of a proposal from Denmark
      Consideration of addition of an agenda item at IWC/65 in 2014 covering Russian Federation catches of stinky gray whales
   b. Conservation Committee
   c. Finance and Administration Committee
   d. Infractions Sub-Committee
   e. Scientific Committee
      As part of the report of the Scientific Committee's work, Bureau members may wish to comment on the process to be used to review the Scientific Committee's governance procedures as requested by the Heads of Delegations during the meeting in Korea in 2013. A draft paper suggesting a possible review process will be available.
   f. Working Group on Whale Killing Methods and Associated Welfare Issues
9. Preparation for IWC/65 in 2014
   a. Location, venue, date
   b. Duration (including length of sub-group meetings)
   c. Private Commissioners Meeting agenda for IWC/65
   d. Development of IWC/65 agenda and timetable
   e. Process for accelerating the production of the Chair's report
10. Secretariat
    a. Secondment of Technical Adviser
11. Bureau
    a. Next meeting(s)
12. Any other business

Annex C

List of Documents

IWC/S13/BUR		Agenda Item
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2.	List of Documents	3
3.	Draft Minutes of March Teleconference	4
4.	Bureau Procedures	6
5.	Provisional Financial Statement	7a
6.	Report on Uncollected Contributions and Suspension of Voting Rights	7c
7.	Review of 2nd half of Biennial Budget (2013-14)	7d
8.	Process for Changing Financial Year	7e
9.	Approval of Research Expenditure	7f
10.	Updates on Intersessional Work	8
11.	Process for Intersessional Decision Making	8a
12.	Review of Scientific Committee Governance Procedures	8e
13.	Venue for IWC/65	9a
14.	Duration for IWC/65	9b
15.	Proposed Agenda for Private Commissioners Meeting	9c
16.	IWC/65 Initial Draft Agenda	9d
17.	Proposal for Increasing the Efficiency of Production for IWC Meeting Reports	9e

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Annex D

Bureau Procedures Guidance

The Bureau's Terms of Reference are provided in the Rules of Procedure, and the Bureau is not a decision-making forum. Its purpose is limited to the provision of advice to the Chair of the Commission and to the Executive Secretary, and the consideration of financial and administrative tasks only in the context of making recommendations to the Finance and Administration Committee.

PURPOSE OF THIS GUIDANCE

The purpose of this guidance is to describe how the Bureau will carry out its activities under the Rules of Procedure, and is intended to supplement the applicable Rules. If there is any conflict between this Guidance and the Rules of Procedure, the Rules will govern. The Bureau may review and amend this guidance from time to time.

INTERSESSIONAL BUREAU VACANCIES

If a Chair of the Commission, Vice-Chair of the Commission or Chair of the Finance and Administration Committee is selected intersessionally, that said Commissioner shall also be a member of the Bureau. For the four additional Bureau members, if he or she is replaced by a Contracting Government during an intersessional period, the Chair of the Commission will offer Bureau membership to that new Commissioner. If declined, the Chair of the Commission, after consultation with other members, may invite another Commissioner to fill an intersessional Bureau vacancy, taking into account that the necessary range of views and interests are represented.

ATTENDANCE

In recognition of the value of advice or guidance provided by the Bureau, its members shall make every effort to attend meetings (including teleconferences) of the Bureau. Attendance by five Bureau members shall be required to constitute a Bureau meeting which must include either the Chair or Vice-Chair. Absent members may provide their contributions to the meeting.

PROCESS FOR PROVIDING ADVICE

Recognising that the Bureau is an advisory body and not a decision-making forum, the Bureau shall make every effort to provide consensus based advice. Otherwise, individual advice of Bureau members will be provided.

FREQUENCY OF MEETINGS

The Bureau will meet at least once a year, and will hold a teleconference with its members at least once a year. The Bureau will also meet, as needed, during or between meetings of the Commission.

NOTIFICATION OF BUREAU MEETINGS TO CONTRACTING GOVERNMENTS

The Secretariat will post notices of Bureau meetings on the IWC website. The website will also include the annotated agenda of Bureau meetings and the Chair's Report of Bureau meetings. The minutes will remain confidential.

Chair's Report of the 2014 IWC Bureau Meeting

4 June 2014, London, UK

Chair's Report of the 2014 IWC Bureau Meeting

Wednesday 4 June 2014, Nobel House, London

This was the second 'in-person' meeting of the IWC's Bureau. The object of the meeting was to develop the arrangements and draft agenda for IWC/65 in accordance with Rule of Procedure F.2.d(i). The Chair of the Commission acted as Chair of the Bureau.

1. WELCOME

Mr Nigel Gooding (UK) welcomed participants to Defra's offices. He emphasised the UK's support for the work of the IWC and acknowledged the Bureau's role in supporting the smooth running of the organisation at biennial meetings and during the intersessional period. He noted that an extensive range of work was taking place intersessionally and thanked the Bureau members for their on-going contribution. The Chair responded by thanking the UK for its willingness to host the meeting and for providing such a pleasant meeting environment.

A list of participants is given at Annex A.

2. APPOINTMENT OF RAPPORTEUR

The Secretary agreed to act as rapporteur.

3. ADOPTION OF AGENDA

The adopted agenda is given at Annex B.

4. SCHEDULE OF MEETINGS AT IWC/65

The Bureau reviewed a draft meeting schedule for IWC/65 and noted that the duration was reduced by three days compared to IWC/64 in 2012. The reduced time schedule would require efficient organisation to successfully complete the meeting, and accordingly the Bureau asked the Secretary to make arrangements to ensure Sub-committee reports were available in time for plenary.

The Bureau noted that the shorted time would also require an efficient approach to debate, especially at plenary. Accordingly they encouraged the Chair to use an active approach to time management and for Contracting Governments to prioritise associating with the views of other parties, especially within regional representations, wherever possible so as to avoid repetition.

Following from the above comments, the Bureau noted the purpose of the Sub-committees was to provide time for a greater level of debate and to forward recommendations for decision to plenary. To avoid repetition the Bureau advised the Chair to allocate less time for plenary debate where material had already been covered in Sub-committee and to focus discussions on items which required the Commission to take a decision. The Bureau asked the Secretary to ensure IWC/65 invitations to Contracting Governments encouraged all Commissioners to attend the Sub-committee meetings.

The Bureau encouraged the Chair to fix times for opening of each plenary item. This would provide all participants with an expectation of how much time was available, and would help move towards decision making. In fixing times, the Bureau noted that several important decisions were required as part of the F&A Committee's agenda, and accordingly advised the Chair to examine ways to open these items for discussion earlier in plenary.

The Bureau discussed how to increase the value of the Private Commissioners' Meeting in supporting the efficient running of IWC/65. It noted this meeting could be used to highlight the main Sub-committee recommendations and therefore help to reduce repetition of Sub-committee material at plenary. Accordingly the Bureau advised that the Private Commissioner's Meeting should start on the morning of Sunday 14 September, as opposed to the afternoon as previously suggested. This opportunity for increased duration would also allow Commissioners to be briefed on any items of clarification or decision arising from the 2013 and 2014 Scientific Committee reports, as well the main decisions arising from F&A Committee which would have concluded the previous day.

The Bureau noted that a pre-meeting of the IWC's Aboriginal Subsistence Whaling Working Group with representatives of native hunters was planned for Wednesday 10 September 2014. The Bureau encouraged the Secretary to write to Chairs of other Committees and Sub-committees to see if they would wish to use any further spare rooms at the Grand Hotel Bernardin on this day for other business.

Noting these suggested modifications to the management of IWC/65 the Chair agreed to provide a Circular Communication outlining how she intended to run the over-all meeting.

The Government of Slovenia drew attention to its official reception which would be hosted on behalf of the national government and the local municipality on the evening of Monday 15 September 2014. Slovenia also requested early notification of the attendance of high level delegates at IWC/64 so it could make appropriate protocol arrangements.

The Bureau encouraged the Secretariat to support the Chair in making available a press release at the end of the meeting. This would highlight the main decisions and outcomes achieved at the meeting and especially focus upon the breadth of work undertaken by the IWC. The press release would stress the positive achievements of IWC/65 and would be in addition to the adoption of a summary of decisions by plenary at the close of the meeting. The Bureau also noted the opportunity for the Chair to provide a closing statement.

5. REVIEW OF DRAFT AGENDA FOR IWC/65

a. Order of Items

The Bureau reviewed a draft Agenda for IWC/65 based upon the same order of items used at IWC/64 in 2012, except that two items with proposed schedule amendments were placed the top of the agenda in line with the Bureau's previous advice to prioritise the Commission's decision-making role.

The Bureau discussed the draft and made the following recommendations to the Chair.

- That all items proposing an amendment to the Schedule of the International Convention for the Regulation of Whaling should be retained at the top of the agenda. Japan recorded that it will submit a proposed Schedule amendment relating to small type whaling at IWC/65.

Any further Schedule amendments received before the 60 day deadline will placed sequentially at the top of the agenda.
- The introduction of a new item to discuss all proposed draft Resolutions. This should be placed high on the agenda (after items containing Schedule amendments) in order to allow maximum time to reach consensus. If the adoption of a Resolution relates to material lower down the agenda the Chair may opt to bring forward the necessary discussion. The location of this item early in the agenda will provide maximum opportunity for consensus decision making.
- That all Contracting Governments will have had sufficient time to receive the reports of the Scientific Committee meetings held in 2013 and 2014. Accordingly individual agenda items should move directly to Commission discussion. The Bureau unanimously advised that this measure is necessary in order to allow the Commission to complete its extensive agenda within the four days available, and requested the Secretary to add annotations to each agenda item to highlight the work undertaken by the Scientific Committee and make reference to the relevant sections of the Scientific Committee reports.
- The Bureau noted that Chair of the Scientific Committee will attend throughout the plenary meeting and will be ready to respond to questions or clarifications. It encouraged Contracting Governments to submit any advance requests for clarification through the Secretariat prior to the opening of the meeting.
- All Finance and Administration activities should be collated under one agenda item, with the exception of the adoption of financial statements and the Commission budget which will continue to be handled separately. Discussion relating to the adoption of the research budget and associated two year plan will be heard at the F&A Committee, who will make recommendations to plenary.
- An item on membership of the Bureau should be added to the F&A Committee agenda. This will allow the F&A Committee to propose nominations for Bureau members to the Commission to replace those who are standing down at the end of their two year terms.
- To introduce a new item at the start of 'Special Permits' to allow Australia, Japan and New Zealand to report on the implications for the IWC of the recent case at the International Court of Justice.
- To introduce a new item near the end of the agenda to formally adopt all Committee, Sub-committee and Working Group reports.
- To adopt a summary of outcomes, decisions and required actions by plenary immediately before the close of the meeting.
- To allow the Chair to make a closing statement.

Recalling the advice to fix time slots for plenary agenda items (see Item 4 above) the Bureau suggested that the Chair should publish timings six weeks in advance of IWC/65.

The Bureau recognised that a member from the Buenos Aires Group of Contracting Governments to the IWC had been unable to attend the present meeting. It requested the Chair and Secretary to write to those countries to seek any additional input on the draft Agenda prior to its distribution to the Commission on 7 June 2014.

The Bureau agreed to meet again in the early evening of Saturday 13 September 2014 to discuss arrangements for the Private Commissioners' Meeting and IWC/65.

b. Advice to the Chair on introduction and handling of:

i. Denmark/Greenland catch limit renewal

The Bureau discussed the intersessional outreach undertaken by Denmark/Greenland in relation to the Greenland Aboriginal Subsistence Whaling Programme and the desire for the Commission to adopt catch limits at IWC/65. All Bureau members acknowledged the importance of the outreach programme and recalled that Denmark had extended the time period after which it would submit notification of withdrawal so as to allow every opportunity to resolve the issue at IWC/65[1].

The Bureau acknowledged the gravity of the situation for the long term functioning of the IWC. It noted that the IWC's Rules of Procedure required all proposed Schedule amendments to be circulated to Contracting Governments by 17 July 2014 and accordingly the Bureau urged all Contracting Governments to continue their intersessional discussions with Denmark/Greenland in the anticipation that proposals presented at IWC/65 will be acceptable to a wide range of parties.

ii. Sanctuary proposals

The Bureau noted that two Sanctuary issues were under discussion – the first relating to the decadal review of the Southern Ocean Sanctuary, and the second related to a proposal for a South Atlantic Whale Sanctuary.

The Bureau reviewed the Scientific Committee's progress on the Southern Ocean Sanctuary review from its 2014 meeting. The Committee agreed to assemble an intersessional group to assemble information that might assist the Commission to establish scientific objectives for the Sanctuary. The report of the intersessional group will be circulated to members of the Scientific Committee and submitted to the Commission three weeks in advance of IWC/65. The Bureau agreed that the process for review of the Southern Ocean Sanctuary was proceeding well.

The Bureau noted that the Scientific Committee discussed the proposed South Atlantic Sanctuary at its 2014 meeting. The Scientific Committee had requested clarification from the Commission at IWC/65 on the process for the continuation of the review of this Sanctuary, including especially the use of external experts. Bureau members encouraged the Chair to gain clarification from the Sanctuary's proponents on how they wished to handle the matter at IWC/65, including on whether they wished the Commission to make a decision.

iii. Special permits

The Bureau recalled its earlier advice under Item 5 above to establish a dedicated agenda sub- item at IWC/65 to allow the Commission to discuss the relevance to the IWC of the recent case at the International Court of Justice (ICJ). Australia and Japan proposed to work intersessionally (along with colleagues from New Zealand) to present the Commission with a joint document outlining the implications for IWC.

Regarding specific special permits, the Bureau acknowledged four areas for discussion at IWC/65 as follows.

(1) The review of JARPAII. The Bureau noted that the Scientific Committee had completed its review of JARPAII although scientists from several Contracting Governments had not participated and had provided statements explaining their position. The Bureau recognised that following the ICJ judgement the

[1]See Circular Communications IWC.CCG.1064 and IWC.CCG.1080.

Commission would need to decide how it wished to handle the JARPAII review and to clarify the status of data collected under the programme. The Bureau also noted that the Commission may wish to decide how to incorporate any outcomes from the ICJ into the 'Annex P' process, and to confirm the use of Commission funds for supporting Annex P reviews.

(2) A new research programme for the Antarctic. Japan indicated its intention to submit a new Antarctic research whaling plan that will meet the conditions set out through the ICJ decision by the end of 2014 (i.e. six months in advance of the 2015 meeting of the Scientific Committee). This will create the requirement for a review under the Scientific Committee's process[2], and the 2015 research budget contains a proposed allowance to support this review.

(3) The periodic review of JARPNII. This programme completed its second six year cycle in 2013 and accordingly Japan requested a periodic review to take place in time for the 2016 meeting of the Scientific Committee. A proposal for financial support of this review has been included in the research fund allocation.

(4) Current activity under JARPNII. At the time of the Bureau meeting JARPNII activity was in progress both in coastal and offshore waters. Sample sizes had been reduced in accordance with requirements from the ICJ. Japan noted that if the programme was reviewed in 2016 as suggested above it would be possible for a new plan to be submitted to the 2017 Scientific Committee meeting. This was three years hence and so no budget request had been made at this stage for the review of a new JARPN programme.

6. COMMISSION OFFICERS

The Bureau noted that the Chair and Vice-Chair are appointed on two year terms[3], and the Chair indicated that she would stand down at the end of her current term (i.e. at the close of IWC/65). The Bureau acknowledged that it is customary IWC practice for the Vice-Chair to stand for election as Chair, and accordingly M. Chemay (Belgium) indicated he would be willing to stand for election as Chair at the end of IWC/65. The Bureau noted that it is also customary for the Chair and Vice-Chair to represent the full range of views expressed at the IWC, and Japan indicated that if requested to do so by the Commission it would consider standing for nomination for Vice-Chair.

The Bureau thanked the Chair of the F&A Committee for her extensive hard work over the previous two terms and congratulated her on retirement from the Australian Public Service. The Chair of the F&A Committee indicated that she had canvassed various countries on their willingness to stand for election as F&A Chair at the end of IWC/65 and was pleased to report that the Commissioner for the USA had indicated his willingness to do so if acceptable to all members of the Commission.

The Bureau noted that a new Chair and Vice-Chair for the Conservation Committee, and Chair for the Aboriginal Subsistence Whaling Sub-committee would need to be appointed at IWC/65.

The Bureau also noted that Commissioners serve on the Bureau for a term of two years and recognised that this would potentially cause a large proportion of its members to change after each meeting which may compromise continuity. After debate there was agreement to add the following paragraph to the Bureau's procedural guidance:

Continuity of Bureau Membership
There is potential for substantial change in Bureau membership given the two year terms for Bureau members. In order to foster continuity in Bureau membership, one or more of the four Commissioners representing a range of views and interests may be encouraged to be nominated for a second term.

The updated guidance document is at Annex D.

7. OTHER

a. Press fees

The Bureau considered a request by the Secretary to waive press fees at IWC/65 pending a discussion on their continued use at the F&A Committee. The request followed a decision to waive fees at IWC/64 after a proposal from the host government (Panama), and Slovenia as host for IWC/65 supported a continuation of this approach.

After discussion the Bureau agreed to waive the local press fee at IWC/65 and to add the item to the F&A Committee agenda. It requested the Secretary to present ways to develop the press accreditation procedure.

b. Early use of part of the Research Fund

The Bureau noted that at its 2014 meeting the Scientific Committee made a budget request for work on climate change[4]. The work is planned for August 2014 to take advantage of a gathering of relevant specialists at the International Marine Conservation Congress in Glasgow.

However this timing is an advance of the Commission's schedule for approving the use of research funds. Recognising this, the Bureau advised the Chair to write to Contracting Governments to explain the situation and request approval through a silence procedure. In proposing this advice the Bureau noted this was a unique situation which would be prevented in future years by the Scientific Committee's introduction of two-year work plans.

c. Secretary's contract

The Bureau noted that the Secretary's contract will expire in 2016, shortly after the close of IWC/66. Accordingly, the Bureau asked the Chair to place the issue of the Secretary's contract on the agenda for the Private Commissioners' meeting on Sunday 14 September 2014.

8. CLOSE

The Chair thanked all participants and recalled the agreement under item 5a above to meet again on the evening of Saturday 13 September 2014 in Portoroz, Slovenia. The meeting closed at 14:30.

[2]This process is referred to as 'Annex P' and the version referred to here is described in *J. Cetacean Res. Manage. (Suppl.)* 14: 465-468 [2013].
[3]See Rule of Procedure F.1 and G.1.
[4]Report of the 2014 Scientific Committee meeting, Table 22, project E06.

Annex A

List of Participants

AUSTRALIA
Donna Petrachenko
Chair of F&A Committee
Yvette Blackman

BELGIUM
Frederic Chemay
Vice-Chair of the Commission

GHANA
Mike Akyeampong

JAPAN
Joji Morishita
Tatsuo Hirayama
Naohito Okazoe

PANAMA
[Apologies received] Yazmin Brea

ST LUCIA
Jeannine Compton-Antoine
Chair of the Commission

SLOVENIA
[By telephone] André Bibic

UK
[Welcome address] Nigel Gooding

USA
Ryan Wulff
Roger Eckert
Melissa Garcia

SECRETARIAT
Simon Brockington
Brendan Miller

Annex B

Adopted Agenda

1. Welcome remarks
2. Schedule of Meetings at IWC/65
3. Review of Draft Agenda for IWC/65
   a. Order of Items
   b. Advice to the Chair on introduction and handling of:
      i. Denmark/Greenland catch limit renewal
      ii. Sanctuary proposals
      iii. Special permits
4. Commission Officers
5. Other
   a. Press fees
   b. Early use of part of the research fund
   c. Secretary's contract

Annex C

Schedule of Meetings at IWC/65

Schedule of Meetings for IWC/65 in 2014 (Slovenia):

	Day	Morning		Afternoon
Sub Committees	Thurs 11 Sept	WKM&AWI	INF	BSC
	Fri 12 Sept	CC		ASW
	Sat 13 Sept	F&A		Bureau
Private Commissioners	Sun 14 Sept	PCOMMS		
Plenary	Mon 15 Sept	Plenary (Four Days) Monday 15 Sept-Thursday 18 Sept		
	Tues 16 Sept			
	Wed 17 Sept			
	Thurs 18 Sept			

Abbreviations:
WKM&AWI: Working Group on Whale Killing Methods and Associated Welfare Concerns
INF: Infractions Sub-committee
BSC: Budgetary Sub-committee
CC: Conservation Committee
ASW: Aboriginal Subsistence Whaling Sub-committee
F&A: Finance and Administration Committee
PCOMMS: Private Meeting of Commissioners
Note: The Bureau will meet on the evening of Saturday 13 September to review arrangements for the Private Commissioners' Meeting and for IWC/65 Plenary.

Annex D

Bureau Procedures Guidance

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PURPOSE OF THIS GUIDANCE

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If a Chair of the Commission, Vice-Chair of the Commission or Chair of the Finance and Administration Committee is selected intersessionally, that said Commissioner shall also be a member of the Bureau. For the four additional Bureau members, if he or she is replaced by a Contracting Government during an intersessional period, the Chair of the Commission will offer Bureau membership to that new Commissioner. If declined, the Chair of the Commission, after consultation with other members, may invite another Commissioner to fill an intersessional Bureau vacancy, taking into account that the necessary range of views and interests are represented.

CONTINUITY OF BUREAU MEMBERSHIP

There is potential for substantial change in Bureau membership given the two year terms for Bureau members. In order to foster continuity in Bureau membership, one or more of the four Commissioners representing a range of views and interests may be encouraged to be nominated for a second term.

ATTENDANCE

In recognition of the value of advice or guidance provided by the Bureau, its members shall make every effort to attend meetings (including teleconferences) of the Bureau. Attendance by five Bureau members shall be required to constitute a Bureau meeting which must include either the Chair or Vice-Chair. Absent members may provide their contributions to the meeting.

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Recognising that the Bureau is an advisory body and not a decision-making forum, the Bureau shall make every effort to provide consensus based advice. Otherwise, individual advice of Bureau members will be provided.

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The Bureau will meet at least once a year, and will hold a teleconference with its members at least once a year. The Bureau will also meet, as needed, during or between meetings of the Commission.

NOTIFICATION OF BUREAU MEETINGS TO CONTRACTING GOVERNMENTS

The Secretariat will post notices of Bureau meetings on the IWC website. The website will also include the annotated agenda of Bureau meetings and the Chair's Report of Bureau meetings. The minutes will remain confidential.

Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic

6-7 March 2014, Anchorage, Alaska, USA

Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic[1]

1. INTRODUCTION

The Workshop was held from 6-7 March 2014, in Anchorage, Alaska, USA. DeMaster was appointed Chair. The list of participants is given as Annex A and the Agenda as Annex B. The report was complied by Reeves, Donovan, Moore, Rosa, Garcia, Reed, Tillman, Rowles, DeMaster and Brockington.

1.1 Background

During the 62nd meeting of the International Whaling Commission (hereafter IWC) in 2010 (IWC, 2011a, p.24), the Commission agreed that the Arctic was a region which required the development of measures to prevent tragedies similar to the Deepwater Horizon oil spill. As a result, the Commission requested that interested member governments work with the Scientific Committee to establish an intersessional Working Group to help develop a plan for a Workshop on Anthropogenic Impacts in the Arctic Ocean relevant to cetaceans. The Commission also requested the Workshop consider all the growing anthropogenic uses arising from increased access to the Arctic, rather than just limiting research to oil and gas. The United States and the World Wildlife Fund contributed funding to the IWC in support of this Workshop.

In 2011 and 2012, a steering committee developed a proposed agenda for this Workshop and submitted it to the IWC Scientific Committee for review (IWC, 2012, p.37; 2013, p.46-7). In addition to making specific recommendations to be considered while planning the Workshop, the steering committee recommended that the Workshop focus on human activities related to oil and gas exploration, commercial shipping and tourism, as well as likely changes to the ecosystem as a result of climate change.

In 2012, the United States offered to host the Workshop. In 2013, the United States re-convened the steering committee, with additional representatives from the Scientific Committee and other bodies, to finalise the detailed planning. The steering committee considered the 2010 recommendations of the Commission and 2012 recommendations of the Scientific Committee in developing the Workshop agenda.

1.2 Mission of the Workshop

The Arctic is a unique region with extreme climate, sensitive ecosystems, vast natural resources, and rich wildlife diversity. Changes in the climate are leading *inter alia* to a decrease in ice cover, an earlier seasonal retreat, and later formation of ice which provides new opportunities for transport and access to resources. Interest in the region for shipping, tourism, oil and gas, and other industries continues to grow. Developing the Arctic in a responsible manner (by putting the environment and local people to the fore) and increased use of environmentally efficient technologies may lead to sustainable economic growth by stimulating job creation. If this is not done the consequences for local communities, whales and the environment could be severe. Cooperation and dialogue among the Arctic states, international organisations, industry, scientists, and civil society organisations are critical. An important focus of the present Workshop is Arctic commercial shipping and oil and gas activities, and in particular their potential impacts on cetaceans and the ecosystems upon which they depend. The Workshop aimed to facilitate an open dialogue amongst stakeholders on *inter alia* what research has been/is being conducted; what management measures have been/are being implemented; what knowledge gaps and concerns exist; and what information the IWC can provide to assist managers in preparing for the expected impacts. For additional information, see Annex B.

1.3 Participants

Participants included individuals from a wide range of stakeholders, including: intergovernmental organisations, national authorities from IWC member countries, indigenous people and local authorities, affected communities, environmental organisations, industries and companies working within shipping and oil and gas, scientists and academics. For additional information, see Annex A.

2. WORKSHOP OPENING

Doug DeMaster, Science Director of the Alaska Fisheries Science Center, opened the Workshop, welcomed participants and provided an overview of the Workshop objectives. Recognising that a 2-day Workshop could only be the start of the process, he noted the need to begin to: (a) identify concerns of stakeholders; (b) identify knowledge gaps that if filled can also assist to prioritise threats and help identify mitigation measures; (c) obtain input from stakeholders on how the IWC should prioritise its future work related to the Arctic (e.g. scientific focus, policy effort, timing, funding); (d) provide advice or mechanisms to obtain information, and assist sustainable development in the Arctic that preserves the ecosystem, cetacean populations, and native cultural traditions; and (e) discuss how current initiatives by various groups/nations could be supported by the IWC or its members, with the objective of coordinating efforts across international boundaries and increasing international collaboration.

Simon Brockington, Secretary to the IWC, introduced participants to the structure, roles and responsibilities of the IWC. He highlighted the IWC's regulatory role in managing whaling and noted that there are many other human activities that may affect the status of whales. He emphasised that the IWC collects information from many sources, including that gathered at this Workshop, and generates advice on reducing impacts. This advice is applied either by member governments, by other intergovernmental organisations, or in partnership with industry and/or NGOs.

Greg Donovan, the IWC Secretariat's Head of Science, introduced the work of the Scientific Committee with a focus on how it might be able to assist international collaborative efforts on scientific aspects of the Arctic issues. He emphasised the work the Committee has done to estimate the effects of human activities on cetacean populations, assist in setting mitigation priorities and assess the effectiveness of mitigation measures. He noted the key expertise of the IWC Scientific Committee in terms of: (1) monitoring abundance; and (2) developing population modelling frameworks that explicitly account for uncertainty. Dealing with activities

[1]Presented to the meeting as IWC/65/Rep07rev1.

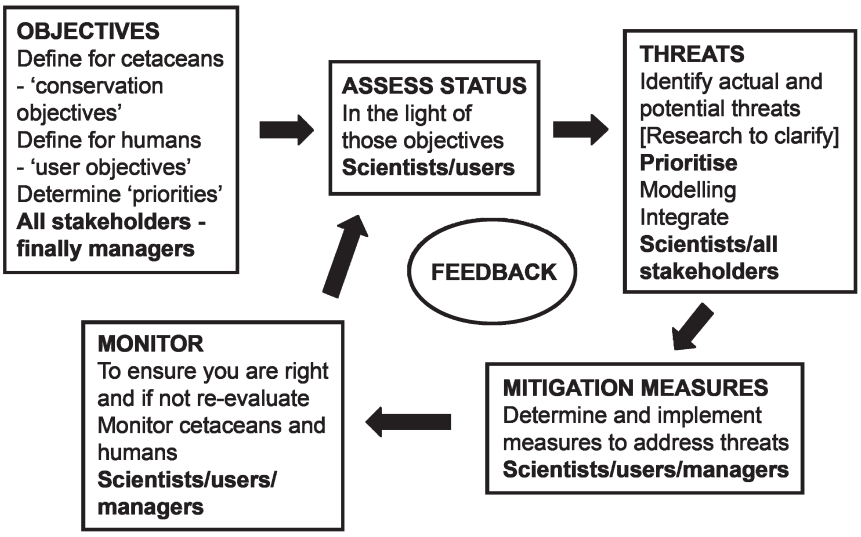

Fig. 1. General approach to examine effects of human activities on cetaceans.

that lead directly to mortality (e.g. hunting, ship strikes, entanglements in fishing gear) is easier than addressing threats that affect the health or viability of a population (e.g. the many factors surrounding habitat 'degradation').

Donovan also mentioned the importance of determining user and conservation objectives to prioritise work and measure success (or failure). Fig. 1 summarises the general approach developed over the years by the Scientific Committee. Challenges arise in situations involving multiple types of users and when a balance needs to be found between user and conservation objectives. He suggested a number of ways in which the Scientific Committee could assist including providing (1) information on principles and guidelines for objectives; (2) data sharing agreements; (3) agreed analytical approaches to monitoring; (4) consistent interpretation and evaluation of mitigation measures; and (5) international endorsement of work proposed or undertaken.

Fran Ulmer, Chair of the US Arctic Research Council, delivered a keynote speech titled 'Ecosystems to Climate Change: Where Do We Go from Here?' She stressed the importance of addressing threats in the Arctic based on the best available information and science, emphasising that the question is not if, but rather how the Arctic will be developed (and when and by whom). Ulmer discussed step changes in Arctic ice that have occurred over the past few decades. She noted that these step changes, which scientists are attempting to understand, represent stunning change in an ecosystem in which ice is a controlling mechanism for productivity at many trophic levels. Understanding the consequences for ice-dependent and ice-associated species, as well as for the ecosystem overall, is the challenge. Ulmer stressed the impacts and changes not only for marine mammals in the Arctic, but also for local indigenous human communities whose health and culture could be affected.

Ulmer closed by discussing why it is essential for scientists to improve their communication skills in order to share their observations with both the public and policy-makers. In a world where the economy dominates the news, it is hard to attract attention to the environment unless it is clear that what is happening in the environment is closely tied to the social and economic health of a region. Ulmer underscored that good science advice must incorporate ecological information and also provide context, including economic and social aspects.

3. PANEL PRESENTATIONS

Day one of the Workshop consisted of presentations as part of four panels: framing, shipping, oil and gas-related activities, and indigenous focuses on increased shipping and oil and gas-related activities. Each panellist was asked to consider the following questions in his or her presentation.

(1) What is the speaker's perspective on the present and future status of Arctic shipping activities (including, but not limited to, commercial, scientific, oil and gas, fishing, and tourism activities) and the impacts on cetaceans (e.g. noise, ship strikes, pollution, debris)?
(2) What has been done to date? Are there any lessons learned (e.g. case studies)? What are the knowledge gaps and concerns?
(3) Any recommendations to the IWC for what information would be most useful and how the IWC should prioritise its future work related to the Arctic?

Annex C provides the available summaries of the presentations[2].

3.1 Framing Panel

The first panel consisted of three presentations to frame the overarching issues of the Workshop:

(1) a status update of marine mammals in the 'new normal' Arctic;
(2) the distribution of endemic cetaceans in relation to hydrocarbon development and commercial shipping in a warming Arctic; and
(3) an overview of the Arctic Council's work related to impacts of increased marine activities on cetaceans.

Sue Moore's presentation, entitled 'Marine Mammals in the 'New Normal' Arctic', summarised how marine mammals are responding to the recent extreme reductions in seasonal sea ice, increases in sea temperatures and alteration of marine trophic structure. Polar bears, walruses and ice seals appear to be the biggest 'losers' with regard to loss of sea ice habitat, while various species of cetaceans appear to be 'winners', at least in the short term (Fig. 2a). For example, over the past decade the Bering-Chukchi-Beaufort (B-C-B) population of bowhead whales (*Balaena*

[2]Copies of each presentation are available from the authors.

mysticetus) has increased in number, the observed number of calves is high and individuals taken by hunting are in good body condition. In part, this may be because bowheads are finding more prey, both copepods and euphausiids, in the 'New Normal' Arctic (Fig. 2b). This recent finding was highlighted because, during the 2009 IWC Cetaceans and Climate Change Workshop (IWC, 2010), a focal question was how B-C-B bowhead whales might respond to habitat alterations associated with rapid climate change. Moore emphasised that all cetacean species, both those endemic to the Arctic and those that seasonally migrate there, would have to be resilient enough to adapt to the now-evident rapid pace of change, including impacts brought by increasing human activities.

Randall Reeves gave a presentation entitled 'The Arctic 'Ice' Whales: Warming, Shipping, and Oil and Gas Development,' summarising Reeves *et al.* (2014). He credited Wendy Elliott (WWF-International) for initiating the project and Pete Ewins (WWF-Canada) for driving it to completion. The objective was to produce authoritative range maps for the three cetacean species endemic to the Arctic, the bowhead whale, white whale (beluga) and narwhal, and then use these maps together with maps of ship traffic patterns and of oil and gas lease areas and structures (e.g. platforms, drilling sites) to obtain a broad-scale understanding of the potential impacts of climate-related expansion of industrial activity on Arctic whale populations. Results showed extensive overlap between areas inhabited by the whales and areas of increasing interest for shipping and hydrocarbon exploration or development. Among points of emphasis were:

(1) there is little reliable baseline information (numbers, trends, health, etc.) on some species in some areas (e.g. Okhotsk *vs* B-C-B Seas bowhead whales; Svalbard/Frans Josef Land narwhals);
(2) the nature and degree of threats are likely to vary by species, region and time, with great uncertainty regarding the relative sensitivity and potential for adaptation of the different species;
(3) understanding of cause-effect relationships, impact thresholds (dose-response) and how to measure and assess risk, mitigation effectiveness etc. is improving but still far from sufficient; and
(4) although significant progress is being made in the search for ways to define, quantify and assess cumulative impacts, much more development and testing of applicable methodologies is needed.

Allison Reed provided an overview of the Arctic Council's work related to impacts of increased marine activities on cetaceans. The Arctic Council provides a forum for promoting cooperation, coordination, and interaction among the eight Arctic States with the involvement of indigenous communities on common issues. The Council supports six working groups, all of which have activities relevant to anthropogenic impacts on cetaceans. The presentation highlighted activities from the three working groups with the most direct relevance to the IWC (Fig. 2c): Conservation of Arctic Flora and Fauna (CAFF); Emergency Prevention, Preparedness, and Response (EPPR); and Protection of the Arctic Marine Environment (PAME). CAFF's work involves planning and implementing biodiversity monitoring and assessments, while EPPR's work includes recommendations for oil spill prevention and response. PAME's work focuses on the identification of ecologically and culturally important marine areas and assessing options for management and protection of such areas. PAME's Arctic Ocean Review, presented at the 2013 Ministerial meeting in Kiruna, Sweden, recommends increasing collaboration with the IWC and other international organisations on cetacean-related issues.

3.2 Shipping Panel

The second panel, chaired by Cheryl Rosa of the US Arctic Research Commission, provided information and views related to commercial shipping issues. Lawson Brigham framed the panel presentations, identifying the following key issues for the Workshop: traffic increase, seasonal shipping, traffic monitoring and awareness (AIS), ship data sharing, balancing freedom of navigation and special measures for cetaceans, information sharing, ship observations and indigenous hunting, routing and fairways, and regional and local agreements. Four experts provided overviews and information on several shipping-related issues.

- Heike Deggim discussed the International Maritime Organization (IMO) and its regulatory activities.
- James Houck outlined the US Coast Guard's proposed routing measures to mitigate the effects of additional shipping while, simultaneously, increasing safety and predictability in the Bering Strait.
- Henrik Falck summarised industry experience with transshipment in the Northern Sea Route.
- Angelia Vanderlaan discussed right whale vessel strikes and mitigation measures in Canadian waters touching upon successes and failures.

Annex C provides summaries of presentations, where these were provided. The highlights of the presentations and discussions are summarised below.

3.2.1 Highlights of Shipping Panel presentations and discussions

In their presentations, the individual panellists highlighted a number of points and recommendations regarding issues related to commercial shipping; other recommendations arose out of discussions after the presentations. A summary of these is given below.

SHIPPING DATA AND PROJECTIONS

- It is probably better to frame the issue as 'marine operations' rather than 'shipping'.
- The global economy is the main driver of development in the Arctic, although climate change affects the practicality of certain economic activities related to marine operations, now and in the future.
- When examining shipping and potential impacts, number of port calls is probably a more relevant metric than transits (provided that reliable data can be obtained). New offshore developments in Russia generate high numbers of port calls, yet the highest concentrations of ship traffic are in the Norwegian Arctic. Thus examining infrastructure is an important component of assessing risk.
- Commercial use of Arctic waters and the Northern Sea Route (NSR) is increasing, but not at the level that is often portrayed in the media (again, commercial viability and profit margins are the dominant factors).
- At present (and probably well into the future), the NSR is not a viable replacement for the Suez or Panama canals (economy of scale 'trumps' shorter sailing distance).
- At present, use is seasonal, and even during 'open water' time, the seas are rarely ice-free in the Arctic. This presents an appreciable risk to mariners (one that is often overlooked).

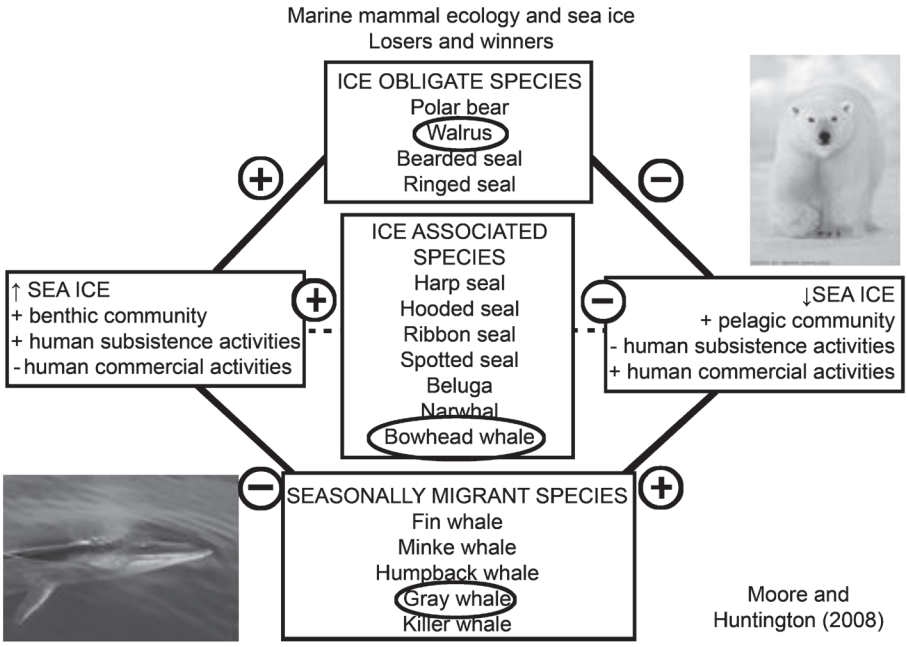

Fig. 2(a). 'Winners' and 'losers' of marine mammal species in the context of reductions in seasonal sea ice, increases in sea temperatures and alteration of marine trophic structure. [Figure modified from Moore and Huntington (2008)].

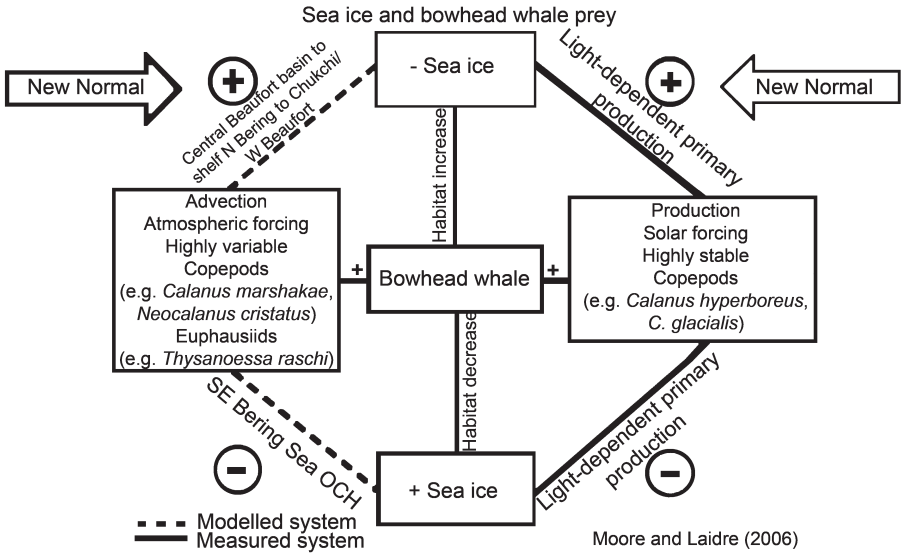

Fig. 2(b). Mechanisms driving the availability of bowhead whale prey in the 'New Normal' Arctic where sea ice is reduced in surface area, volume and period. [Figure modified from Moore and Laidre (2006).]

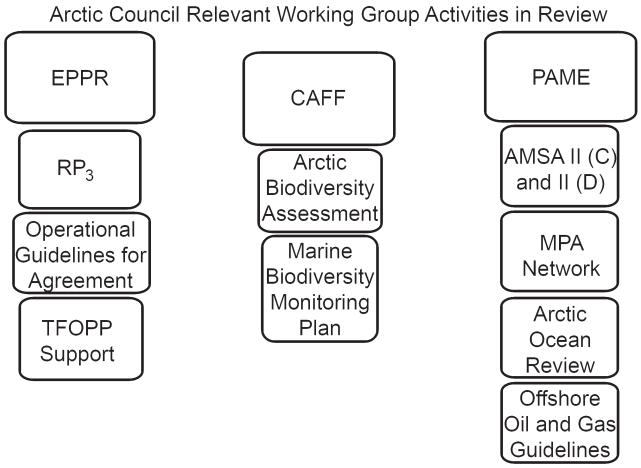

Fig. 2(c): Arctic Council Relevant Working Group Activities in Review. [Figure taken from A. Reed presentation during the Workshop.]

- With respect to risk in icy waters, high-performance ice-strengthened, state of the art vessels are carrying oil in the NSR, often with escorts[3]. These ships employ a strategy that involves carrying their cargo to the edge of Arctic waters then transferring cargo to a non-ice class vessel for further transport to markets. Thus in terms of risk it may be more important to examine the safety of these transfers rather than focus solely on the transport *per se*.
- Most voyages involve polar class ships going through the Arctic, but there is relatively little trans-shipment.
- Projections out to 2050 (AMSA Report) hold the possibility of a very different scene to the present one, with the possibility of transit directly across the pole rather than along the NSR or Northwest Passage.

RELEVANT STAKEHOLDERS

It is important that IWC works with other organisations, some of which are already involved in study, assessment and conservation of marine mammals, e.g.:

- The Arctic Council's the PAME Working Group undertook development of the Arctic Marine Shipping Assessment (AMSA, conducted by the Protection of the Arctic Marine Environment/PAME Working Group) in 2009, with updates at two-year intervals. The AMSA Theme 2 highlights marine mammals and notes that Arctic states should work with IMO and the relevant IGOs to determine impacts of noise, disturbance, ship strikes on cetaceans[4].
- IMO which has multiple relevant measures already in place (e.g. MARPOL, SOLAS, Polar Code) that dictate how polar shipping is to be conducted in the Arctic as well as the responsibility for other potential mitigation measures (e.g. particularly sensitive sea areas (PSSAs), traffic separation schemes (TSSs), issues related to noise).
- Member governments (as well as non-member governments) – marine mammals do not recognise national borders and a co-ordinated approach is essential.
- Alaskan Eskimo Whaling Commission (AEWC) which has an Open Water Season Conflict Avoidance Agreement (CAA) with the oil and gas industry.
- Maritime users - working with industry early, often and closely has been shown to be instrumental to the success of many mitigation measures.
- Scientific bodies – mitigation measures need to be based on robust science.

MITIGATION MEASURES

- Human activities can be managed – free ranging cetaceans' activities cannot.
- Measures (and who is responsible for developing and implementing them) depend on the nature of the threat (ship strikes, chemical pollution, noise pollution, etc.).
- Collaboration and co-operation amongst organisations and stakeholders is key (see 'relevant stakeholders' above) – including those that do not normally communicate directly with one other.
- Moving from a reactive to a proactive position on inter-governmental cooperation, especially in areas such as the Bering Strait, is important for anticipating and avoiding disasters and dealing with accidents.
- It is important to learn from experience in other areas, such as the Bay of Fundy and Scotian Shelf in Canada and Boston and other harbours along the US east coast, which have a suite of different mitigation measures in place to protect whales from ship strikes.
- Introducing measures and getting them adopted by IMO can be a lengthy process but it is worth the effort – understanding the formal process is essential to success.
- Robust risk analyses (that use reliable data on whales, impacts, human activities and likely success) are essential - economic evaluation of the implications of various mitigation measures (e.g. routing restrictions *vs* speed changes) should be part of the documentation that accompanies any proposal.
- Consideration could be given to expanding the AEWC's CAA with the oil and gas industry (see 'relevant stakeholders' above) to include the shipping industry
- Education of mariner users is key to finding solutions and assuring compliance (users have to understand the problem and the solution).
- Ship noise and quieting measures are under discussion by the IMO and the IWC participates in this and should continue to do so. While ship quieting is expensive, economies of scale might eventually bring the costs down, and putting such technologies on new vessels is much less costly than retrofitting existing ships. If actions start now, positive results may be obtained within a decade or so.
- Consideration needs to be given to the class of fishing vessels operating within the Arctic, as at present there is no binding agreement on quality of vessels (although there is a process underway within IMO that requires further ratifications before it becomes binding)[5].
- It is important for national agencies to ensure that adequate response capacity exists in anticipation of accidents.

3.3 Oil- and Gas-related Activities Panel

The third panel, chaired by Teri Rowles of the US National Marine Fisheries Service, focussed on oil- and gas-related activities. Bill Streever framed the panel presentations with overview of oil- and gas-related activities in the Arctic. Five experts provided overviews and information on several shipping-related issues.

- Alexey Knizhnikov gave an overview of oil and gas development in Russia and summarised World Wildlife Fund-Russia's experience with seeking solutions to minimise impacts on cetaceans.
- Mark Everett highlighted the US Coast Guard's environmental protection functions and responsibilities.
- Jim Kendall's presentation described the US Bureau of Ocean Energy Management's outer continental shelf Arctic programs and activities.
- Michael Macrander summarised Shell's oil and gas activities in the Arctic, focusing on the link to science, including studies of marine mammal behavioural responses to acoustics, drilling and seismic activity.
- Lori Schwacke gave an overview on assessing risks to cetaceans from oil- and gas-related activities based on her experiences working on the Deepwater Horizon disaster.

[3]Falck noted that all ships transiting the NSR are accompanied by Russian X-class icebreakers. This reduces the concern of shipping companies over the likelihood of possible grounding or other maritime accidents in the case of loss of vessel power.

[4]*http://www.pame.is/index.php/projects/arctic-marine-shipping/amsa*.

[5]*http://www.imo.org/About/Conventions/ListOfConventions/Pages/The-Torremolinos-International-Convention-for-the-Safety-of-Fishing-Vessels.aspx.*

Annex C provides summaries of presentations where these were provided. The highlights of the presentations and discussions are summarised below.

3.3.1 Highlights of Oil and Gas Panel presentations and discussions

In their presentations, the individual panellists highlighted a number of points and recommendations regarding oil and gas operations, in general, and oil spills, in particular. Other potential issues arose out of discussions after the presentations. A summary of these is given below.

GENERAL AND RISK ASSESSMENT

- All Arctic basins have great potential for further development with major volumes of resources offshore.
- The expected increase in oil and gas activities should be understood as involving factors such as development and transport as well as production.
- Rapid development of shipping as a service for offshore/onshore oil and gas projects can be expected.
- Risk assessment studies should include environmental and socioeconomic evaluations that incorporate traditional knowledge and community input, as well as strong cetacean science (preferably peer-reviewed).
- Once activities have been permitted, monitoring (of both human activities and cetaceans) is essential to assess effectiveness and inform adaptive management.
- It must be recognised that oil and gas-related activities are not the only source of oil pollution or spills.

CO-OPERATION AND RELEVANT STAKEHOLDERS

- Arctic Council Working Groups: EPPR and PAME. The Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic is designed to strengthen cooperation, coordination and mutual assistance and promote operational guidelines in oil pollution preparedness and response. The PAME working group provides policy advice and recommendations on marine safety and marine environmental protection.
- Learning from experience elsewhere is extremely important. This includes:
  - through impacts of and responses to previous accidents (e.g. the 1989 *Exxon Valdez* and 2010 Deepwater Horizon incidents);
  - examples of improved procedures, e.g. work the Alaska Regional Response Team's work on issues such as dispersant use policy and preauthorisation planning, ESA biological assessment of unified plan, NOAA spill risk assessment, and definition of areas to be avoided (ATBA) for dispersant use;
  - development of the AEWC's Conflict Avoidance Agreement (CAA) with the oil and gas industry. which could provide a useful model for other areas;
  - lessons learned from the development of seismic survey monitoring and mitigation plans through collaboration between IUCN's Western Gray Whale Advisory Panel (WGWAP) and Sakhalin Energy Investment Company, which led to the broad approach described by Nowacek *et al.* (2013).
- The International Maritime Organization (IMO) deals with many aspects of safety and marine pollution. The IWC has been trying to increase collaboration with the IMO on issues related to ship strikes and impacts from underwater noise under an Agreement for Cooperation that was signed in 2008.
- Oil spill response: This requires various levels and mechanisms of involvement among parties ranging from national government authorities to state/local government and tribal authorities as well as international coordination through bilateral and multi-lateral agreements, often enabled and/or under the aegis of IGOs.
- Industry and science: There is a need for better scientific understanding of short- and long-term responses of cetaceans to various activities (e.g. those that produce chronic noise, seismic surveys, vessel operations) and for monitoring cetaceans immediately before, during and after potentially disturbing activities or events (e.g. see work undertaken by the WGWAP).
- All research groups: It is important that groups share their experience and disseminate results in a rapid and transparent way given the many related studies being undertaken today (e.g. through the Joint Industry Programme, many companies' individual programmes, naval investigations into effects of sound such as the collaborative study with the USA and Norway, work of the WGWAP, the investigation of the mass stranding of cetaceans in Madagascar).

THREATS AND MITIGATION

- Marine environmental protection includes identification of threats, regulation/monitoring/enforcement, prevention, preparedness, response and oversight, damage or injury assessment, and restoration.
- There is great concern regarding the risks of oil spills and the need for preparedness to respond both to current and projected vessel traffic and to current and projected oil and gas development. Though many requirements for oil spill avoidance and response capability that apply to oil and gas vessels are in place in some areas, such requirements are generally lacking when it comes to other types of vessel traffic.
- There is a need to assess regional capabilities and build capacity for spill response (including training) before new developments occur.
- WWF Russia assessed oil spill response (OSR) capabilities in the Arctic and noted the importance of improved legislation, sensitivity mapping, modelling and monitoring of the behaviour of spills.
- There was an emphasis of the critical role of policies and procedures, planning, training and drills at various levels of response.
- Development of improved mitigation requires a better understanding of cetaceans in a number of ways (the IWC Scientific Committee can assist with this) including:
  - baseline information on potentially impacted populations through prior coordinated research on populations and individuals including evaluation of health parameters;
  - responses of cetaceans to potentially harmful exposures, e.g. to chemicals (directly through inhalation/skin exposure/ingestion and indirectly through prey consumption or habitat) and sound (both pulsed and continuous);
  - characterisation and quantification of cumulative effects or impacts;
  - the modelling framework proposed by the IWC's Pollution 2000 Phase II which is useful in examining population-level effects of chemical pollution and as input into wider modelling efforts.
- Identification of areas to be avoided for cultural or biological reasons may be important for mitigation and management.

POTENTIAL SUBJECTS OF RECOMMENDATIONS

- New offshore oil development should not occur until three gaps are filled: the knowledge gap, governance gap, and technological gap (with respect to spill response in ice).
- The importance of co-operation and partnerships should be stressed, including the coordination of spill response and injury assessment plans across borders and the determination and dissemination of best management practices for response activities.
- As well as providing scientific advice, the IWC should seek to collaborate with the Arctic Council and expand collaboration with the IMO (possibly via an informal group).
- Transparency and inclusiveness should be part of the process for achieving prevention and mitigation; this is especially critical when it comes to oil spill response technology and practice in ice.
- Training and education programmes are needed to address a range of issues (e.g. direct and indirect impacts of *inter alia* noise and chemicals on cetaceans, other potential impacts of industry activities on cetaceans and on human communities that depend on cetaceans for subsistence, cultural differences) and to achieve a common understanding of critical aspects of issues.
- Strategic Environmental Assessment (SEA) should be promoted for all Arctic projects in all Arctic states as a tool for addressing cumulative effects.
- Co-operation with the Arctic Council on the recommendation to conduct a circumpolar risk assessment (EPPR's RP3 report) would be desirable, recognising that a scoping exercise is under way.
- Incorporation of a process similar to the IUCN-WGWAP process should be considered for Arctic projects (e.g. in the Chukchi/Bering Sea pilot project).
- An assessment 'toolbox' for cetaceans, which may vary by species and geographic area, would be useful.
- A process should be developed to evaluate potential sampling approaches, identify model species, support the acquisition of baseline data, coordinate analyses so that regional differences are recognised and understood, establish reference intervals (e.g. frequency of surveys) for monitoring and support preliminary risk assessments.
- A mechanism should be developed for distributing recommendations from workshops such as this one in order to inform policy and legal discussions.

3.4 Indigenous focuses on increased Shipping and Oil and Gas-Related Activities Panel

The fourth panel, chaired by Michael Tillman of the US Marine Mammal Commission, focused on the experience and perspectives of indigenous people regarding increased shipping and oil and gas-related activities. Four panellists were asked to provide views on: (1) the problems their indigenous communities have or anticipate having from oil and gas development and shipping; (2) what might be needed to address these problems (in terms of information needs and/or management actions); and (3) how the IWC and its members might help.

- Eduard Zdor and Edward Rypkhirgin represented the Russian Federation's Traditional Marine Mammal Hunters of Chukotka.
- Fernando Ugarte represented the perspectives of Greenland.
- George Noongwook represented the US Alaska Eskimo Whaling Commission.

Annex C provided summaries of presentations where these were provided. The highlights of the presentations are summarised below.

3.4.1 Highlights of Indigenous Panel presentations

The IWC has an explicit interest in the conservation of large whales and the responsibility for managing any hunts taking these species. Such is the case for the hunting undertaken by indigenous communities of three Arctic members of the IWC: the Russian Federation, Denmark and the United States. These indigenous communities also have hunts for some Arctic species of small cetaceans, over which the IWC's Scientific Committee maintains a watching brief; these are also considered by the North Atlantic Marine Mammal Commission (NAMMCO) and the Canada/Greenland Joint Commission on Conservation and Management of Narwhal and Beluga (JCCM).

THREATS

Although differing in the depth of their concerns, the panellists essentially all recognised the following actual or perceived threats that could impact subsistence consumption:

- oil and gas development and shipping would result in changes in the availability of whales to traditional hunts, e.g. whales respond to seismic operations by changing their migration routes;
- the outcome of cleaning up an oil-spill, whether from a shipping accident or an oil or gas incident, would be uncertain, e.g. threatening the whale stocks used or compromising the safety of the subsistence foods derived from those whale stocks; and
- shipping not only poses a threat to whales but also to whalers, e.g. through collisions and incidents with vessel wakes.

The degree of concern panellists expressed about these threats varied, however, in accord with the nature of domestic governance in their respective countries. Since Greenland has a home-rule government, Greenland hunters are totally integrated into the deliberations and decisions regarding all domestic aspects of oil and gas development, ranging from considering threats to implementing mitigation. Although the US federal government is obliged to consult with Alaskan Native communities about oil and gas development, the perceived effectiveness of consultation efforts was considered generally unsatisfactory; there had been some good results, however, in making private arrangements directly with industry representatives (e.g. conflict avoidance agreements). In the Russian Federation, Chukotka Natives have virtually no input on oil and gas development decisions, a situation which they find to be completely unsatisfactory.

Regarding shipping, panellists focused mainly on the need for increased international cooperation, particularly with respect to monitoring and control to prevent accidents or incidents in the first place. This emphasis was particularly true where countries shared a common maritime choke point, such as the Bering Strait. The growth of tourism in the Arctic was also viewed with some alarm, especially since both domestic and international governance appeared to be lacking.

NEEDS

The panellists identified the following list of needs that governments and industries should address together or individually.

- Providing for transparency regarding all planning and operations.

- Consulting directly with, and making good-faith efforts to account for the concerns of, indigenous communities.
- Sharing in the costs of obtaining and providing the full information required to assess threats and develop mitigation measures.
- Requiring and making use of traditional local knowledge as the foundation for science and management.
- Establishing and maintaining appropriate mechanisms for international cooperation, including any needed governance agreements.
- Developing ship tracking/communication networks for Arctic routes, especially at international choke points.
- Updating and/or development of Arctic charts.
- Providing education and training for indigenous communities which will inevitably be the first responders to any incident.
- Developing the infrastructure (roads, airports, harbours, communication systems, housing, animal treatment and holding facilities, etc.) needed for an adequate response to any incident in the remote, underdeveloped Arctic.

POTENTIAL RECOMMENDATIONS TO IWC

Panellists provided the following ideas on how the IWC might assist in the efforts undertaken by other international fora (e.g. the Arctic Council, IMO) and various national or local bodies to address Arctic development issues.

- Contribute to and facilitate the international exchange of information, particularly with respect to the status of Arctic whale stocks and the IWC's role in managing the indigenous hunts for them.
- Establish a link on the IWC's website to pertinent areas of the websites of other relevant international fora that can be used by IWC members and others interested in IWC issues.
- Establish observer status with pertinent international fora as a way of ensuring that the IWC has a voice regarding subsistence whaling in the Arctic.
- Urge and support the development of needed international agreements for the governance of oil and gas development and shipping.

4. BREAKOUT GROUP DISCUSSIONS

On Day 2 of the Workshop, small breakout groups addressed questions related to two themes. Each theme was led by two Theme Leads, who reported the highlights and recommendations from the small group discussions to the full Workshop. Discussion of those highlights and recommendations took place in light of the earlier Panel discussions and provided additional opportunities for participants to comment on the presentations by Panellists (there had been limited time for detailed discussions of those given the tight workshop timeframe) as well as to raise new issues should they wish.

4.1 Highlights from Theme 1 Breakout Group Discussions (Leads: Donovan and Moore)

Discussion in Theme 1 Breakout Groups focused on two questions:

(1) actual and potential threats facing cetaceans in the Arctic; and
(2) knowledge gaps and how to fill them (including the need for collaborative studies).

The summary below is an attempt to integrate the main issues raised by the four breakout groups, which formed the basis for the recommendations developed under Item 5.

4.1.1 Threats and priorities

It was agreed that the focus of the discussions of threats to cetaceans[6] should be on the following species: the Arctic 'endemic' species (bowhead whale, white whale or beluga and narwhal), the 'regular seasonal residents' (common minke whale, gray whale (Pacific), northern bottlenose whale (Atlantic), killer whale and harbour porpoise). Other 'not-so-regular' (but increasingly present) visitors to parts of the Arctic (blue whale, humpback whale, fin whale, long-finned pilot whale (Atlantic)) may also be subject to the identified threats.

In the Arctic, now and in the future in the light of climate change projections, the major actual/potential threats are those associated with the following human activities:

(a) oil and gas operations;
(b) vessel traffic (of many kinds including transport, tourism/whale watching, fishing, servicing oil and gas operations);
(c) fishing activities; and
(d) unsustainable or unmanaged hunting.

It is likely that all of these, except perhaps (d), will increase in the future.

The actual or potential impacts on cetaceans and the associated activities are summarised in Table 1. The extent to which these impacts are or will become threats at the population level depends on whether appropriate mitigation measures are put into place and complied with.

4.1.2 Knowledge gaps

The general approach to examining the effects of human activities on cetaceans (see Fig. 1) forms the basis for the consideration of knowledge gaps in this section. Apart from the need for stakeholders/managers to determine user and conservation objectives, a necessary first step is to assess the status of the cetacean populations, which implicitly requires an understanding of stock structure. For the large whales, in particular, expertise to achieve this lies within the IWC Scientific Committee; for the small cetaceans, the IWC and NAMMCO Scientific Committees are the primary groups, along with national scientific bodies (e.g. NOAA laboratories in the US, the Committee on the Status of Endangered Wildlife in Canada) and other organisations such as the Joint Committee on Narwhal and Beluga or the JCNB (Greenland and Canada). The IWC Scientific Committee Workshop on Climate Change (IWC, 2010) summarised the state of knowledge on abundance and trends of Arctic cetaceans at that time. This information was also updated in the 2012 Arctic Biological Assessment by the Arctic Council's CAFF Working Group. The information ranges from excellent, for example for the Bering-Chukchi-Beaufort Seas stock of bowhead whales and eastern Pacific gray whales, to poor for some of the other populations of bowhead whales.

Knowledge of status and trends provides a foundation to determine priority populations for conservation and provide a baseline for the examination of risk. If total numbers of deaths caused can be counted or estimated through modelling (e.g. see the recent developments in the IWC POLLUTION 2020 programme; IWC, 2015b), then these numbers can be used to examine population-level effects. However, obtaining quantitative information on the impacts of some stressors (e.g. habitat degradation, noise, chemical pollution) remains difficult for many species and

[6]It was recognised that increases in some human activities have the potential to affect other marine mammal species as well as human communities but this was considered to be generally beyond the scope of Theme 1.

Table 1

Overview of the threats to cetaceans in the Arctic and the primary human activities that are or might be the source of those threats. The Workshop agreed that the most significant concerns in relation to cetacean conservation in the Arctic are oil and gas operations, shipping, fishing and hunting (see text).

Actual/potential threat	Primary human activity/ies
Bycatch	Commercial (and perhaps recreational) fishing
Serious injury/death (not bycatch)	Ship strikes from commercial and recreational vessels; hunting; potentially seismic surveys, military sonar
Mechanical destruction of habitat	Bottom trawls, infrastructure construction, oil and gas development
Prey depletion	Overfishing, habitat degradation due to pollution, climate change, introduction of invasive pathogens, competitors or predators
Acoustic pollution/continuous	All types of vessels, infrastructure construction including that associated with the oil and gas industry
Acoustic pollution/pulse	Seismic surveys, military sonar
Chemical pollution/chronic	Terrestrial industrial development, terrestrial run-off, harbours, discharges from ships, marine development (e.g. associated with oil and gas development; tourism)
Chemical pollution/acute	Oil spills, leaks and some oil spill response activities; other toxin spills
Disease	Discharge from shipping, introduction of invasive species
Synergistic/cumulative	All

populations. In addition, a particularly difficult issue to address concerns the incorporation of synergistic (i.e. when more than one threat is occurring at the same time) and cumulative (i.e. the accumulation of impacts over a period of time) impacts. This presents a challenge from both practical and theoretical perspectives; considerable scientific work is needed to address this issue, both within and outside the IWC Scientific Committee.

In addition, robust risk analysis for certain threats (e.g. ship strikes, entanglement, noise exposure), which can lead to prioritised mitigation efforts, requires good information on the relative abundance and temporal/geographical distribution of both the cetaceans and the human activities. This information can supports predictive spatial modelling and mapping approaches that can identify high risk areas (e.g. a number of initiatives to map 'soundscapes' and compare these with maps of cetacean density and distribution). Spatial modelling requires information on potential explanatory variables (again at appropriate temporal and spatial scales) such as those related to physical factors (e.g. bathymetry, salinity, temperature) and biological factors (e.g. primary productivity, prey availability). This report is not the appropriate place to describe these approaches in detail but rather to note the ongoing work of the IWC Scientific Committee and others in this regard (IWC, 2015a; Redfern *et al.*, 2006; 2013). The Workshop emphasised that for many populations and human activities, information at the appropriate temporal and geographical scales is lacking.

In summary, there are a number of broad areas where further knowledge is required and these vary by species and population and by threat including:

(1) assessment of status of Arctic cetacean populations in the light of agreed conservation objectives;
(2) knowledge of cetaceans and human activities at the appropriate temporal and geographical scales;
(3) quantitative measures of the impacts of individual stressors; and
(4) quantitative assessment of synergistic and cumulative effects.

How these gaps might be filled is discussed in more detail below.

4.1.3 Methods to fill knowledge gaps

DISTRIBUTION, ABUNDANCE AND TRENDS OF CETACEANS

Good information on cetacean distribution and trends in abundance is available for some populations, but lacking in others. Methods for obtaining reliable estimates of absolute abundance and trends (and stock structure) are well known and include visual and acoustic surveys, photographic and genetic mark-recapture studies, etc.; however, undertaking the necessary field work and analyses is expensive and can be logistically challenging in the Arctic. In addition, as is well known, cetaceans do not respect national borders. It is clear that collaborative survey efforts are required. Baseline information is most easily obtained and interpreted from large-scale synoptic surveys.

On a related matter, to identify high-risk areas and design effective mitigation measures, surveys need to be conducted at different times of the year, not simply the time that is best suited for estimating absolute abundance. In order to make use of modern spatial modelling techniques, data on explanatory environmental variables need to be collected. Data need not come solely from large-scale synoptic surveys; smaller-scale studies, both systematic and opportunistic, can contribute useful information if they are designed to collect the right kind of data.

The Workshop **agreed** that the IWC Scientific Committee is an appropriate body to assist in the design of surveys and the collection and analysis of data to:

(1) estimate absolute abundance and trends of Arctic cetaceans (and the associated uncertainty);
(2) co-ordinate small-scale and opportunistic studies such that they can contribute to Arctic-wide modelling and to the development of spatial/habitat models for the Arctic, with the goal of enabling robust predictive modelling to help identify high-risk areas and assist in the development of effective mitigation measures;
(3) improve information on cetacean movements by promoting collaborative studies using photographic and genetic identification of individuals as well as telemetry; and
(4) review and evaluate results of studies undertaken and suggest improvements.

The Workshop **stressed** the need for collaboration amongst research groups and organisations within the region and for data sharing and common analyses. In addition to providing scientific expertise, the IWC may be an appropriate body to assist in such efforts given its experience with data availability agreements and combined databases. It **agreed** that long-term monitoring is essential.

INFORMATION ON HUMAN ACTIVITIES

As noted above, it is important that information on human activities is available at temporal and spatial scales consistent with those of cetaceans (both for identifying high-risk areas and determining effective mitigation measures). Obtaining such information requires considerable collaboration. It

is particularly important to recognise that: (1) in some and perhaps many cases, commercial sensitivities will need to be addressed but also that: (2) threats to cetaceans can **only** properly be assessed and mitigated against if knowledge of human activities is known from **throughout** the population's range (which may include non-Arctic waters). This requires not only the collection of the correct information but also the sharing of that information in an efficient way that protects the interests of data holders. With respect to oil and gas development, the Workshop noted that in some areas, notably off West Greenland, the authorities have ensured that data sharing occurs; in other areas (e.g. on the Sakhalin shelf), lack of data sharing amongst companies has proved a significant barrier in assessing risk and implementing effective mitigation. It is also important to obtain reliable future scenarios for increased human activities when assessing threats and determining mitigation measures and their likely effectiveness. From Table 1, this includes information on:

(1) commercial shipping (collaboration with IMO, industry groups, coast guards, navies, port authorities etc.);
(2) commercial fishing (collaboration with FAO, regional fisheries bodies, fisherman associations, etc.);
(3) offshore oil and gas operations including seismic surveys and infrastructure both at sea and on land (collaboration with industry organisations, individual companies, national authorities, etc.); and
(4) hunting (collaboration amongst intergovernmental bodies such as IWC and NAMMCO, national authorities, local authorities and hunting organisations).

The Workshop again **stressed** the need for collaboration and data sharing within the Arctic region. This will require careful negotiation amongst authorities, industry, research groups and intergovernmental organisations and data sharing. It **agrees** that the IWC may be an appropriate body to assist others in such efforts given its experience with data availability agreements.

INFORMATION ON INDIVIDUAL STRESSORS

For certain threats, such as those from bycatch in fishing gear, ship strikes and hunting, the 'impact' on individuals is relatively straightforward (assumed death in the worst case), although quantification can be extremely difficult for the first two of these for a number of reasons including detection and under-reporting. The IWC and its Scientific Committee have been examining these issues and are continuing to work on them (e.g. see recent IWC Scientific Committee reports and the two Workshops on ship strikes in 2010 and 2014). They are of course providing advice on matters related to aboriginal subsistence hunts for large whales including advice on long-term safe management that explicitly takes uncertainty into account. The AWMP/RMP approaches (not necessarily the specific details of these e.g. with respect to objectives) are appropriate ways to examine population-level impacts.

As noted earlier, determining the impacts of other stressors that do not cause immediate death but may affect 'fitness' of individuals and populations (e.g. affect mortality and reproductive rates) is more complex and difficult. A number of initiatives are underway, such as the IWC's POLLUTION 2000+ and 2020 programmes to examine the impacts of chemical pollutants, and various noise projects under the oil and gas 'Joint Industry Program'[7], IUCN's WGWAP[8], national initiatives and the IWC Scientific Committee.

Regardless of the difficulties involved in obtaining information on non-direct stressors, it should be noted that the RMP/AWMP approaches provide robust means of determining safe removal levels in the face of changing carrying capacity (a proxy for many habitat-related stressors, singly or in combination).

INFORMATION ON SYNERGISTIC AND CUMULATIVE EFFECTS

As noted above, the most difficult issue to address when assessing risk to cetaceans arising out of human activities concerns the incorporation of synergistic (e.g. one or more threats occurring at the same time) and cumulative (i.e. the accumulation of impacts over a period of time) impacts. A complicating factor is that at least in some areas, threats from different companies operating in the same general area at the same time are often only examined individually rather than together by authorities; from a cetacean perspective, it does not matter who is causing the disturbance or what their motives may be. There are some ongoing initiatives to try to examine these complex issues such as the Population Consequences of Disturbance (PCoD)[9] project and the Cumulative Effects Working Group convened by the University of California, Santa Barbara.

Recognising the importance of integrated examination of threats and potential impacts into population modelling, the initiatives that are taking place elsewhere and the expertise within the IWC Scientific Committee on population modelling and dealing with uncertainty, the Workshop **agrees** that there is merit in the IWC Scientific Committee exploring the value of holding a co-sponsored specialist workshop on examining synergistic and cumulative effects at the population level with other interested bodies and projects.

4.2 Highlights from Theme 2 Breakout Group Discussions (Leads: Reeves and Brockington)

The Theme 2 discussion focused on: (1) guidelines and principles for monitoring and mitigation; and (2) development of a collaborative model for the Arctic. The summary below is an attempt to integrate the main issues raised by the four breakout groups, which formed the basis for the recommendations developed under Item 5.

4.2.1 Monitoring

The Workshop identified several issues related to monitoring and mitigation. For human activities, the focus was on shipping and the oil and gas industry. With regard to shipping, there are concerns around ship strikes, noise disturbance, toxin spills, bilge water, tourism, and the need for international coordination and collaboration. With regard to oil and gas development, concerns centre on toxin spills or leaks, noise disturbance (and potentially injury) especially from seismic surveys and icebreaking, dispersant use, and other aspects of oil spill response. These are summarised in Table 1.

With respect to baseline information on cetaceans, it was agreed that there is a need for improved mapping of cetacean ranges and movement patterns; better understanding of population structure, abundance, population dynamics, and health status; climate change processes; and pollutants.

In conclusion, the Workshop **emphasised** that baseline monitoring of whale populations, human activities, and environmental conditions needs to begin before changes or disasters occur and be maintained over the long term post-disturbance (e.g. following an oil spill incident).

[7] *http://www.jipsurvey.com/.*
[8] *https://www.iucn.org/wgwap/wgwap/.*
[9] *http://www.smru.co.uk/news/interim-pcod-(population-consequence-of-disturbance)-report-published/.*

Priorities for monitoring should include direct efforts to characterise whale populations in terms of distribution, abundance, trends, and health indices (e.g. external appearance, body condition) and to describe and quantify ecosystem characteristics. In parts of the Arctic, documenting subsistence harvests and sampling harvested animals can be a valuable element of monitoring (e.g. studies being undertaken during the Alaska bowhead whale hunt). The Workshop **agreed** that the use of whaling villages as centres for cetacean population monitoring, development of underwater sound profiles, biological sampling, etc. should be carefully considered as part of overall monitoring strategies in those parts of the Arctic where aboriginal whaling takes place.

With respect to human activities, a critical component is data sharing. With respect to the oil and gas industry, for example, it is important that events (such as seismic surveys) are not seen in isolation by company. From the perspective of possible impacts on whales then it is important to assess the effect of *all* relevant activities within the species range not just those from a single company (e.g. see the experience off the Sakhalin shelf provided by the IUCN WGWAP which has frequently sought information from all companies not just the company that works with WGWAP). While this may bring to the fore questions of commercial confidentiality, the Workshop **agreed** that it is important that ways are found to respect this whilst ensuring that the requisite information is provided to allow potential impacts to be assessed and appropriate mitigation strategies developed.

The Workshop also briefly discussed new technologies that can assist in monitoring human activities. One example is AIS (or similar) tracking of vessel movements, which *inter alia* allows evaluation of compliance with ship traffic rules to mitigate the ship strike risk to whales as well as providing information on the overall patterns and densities of shipping. It was noted that this technology is not compulsory for all vessels. Other new and emerging monitoring tools that merit development, refinement and dissemination include the use of autonomous aerial platforms and under- or in-water devices such as gliders, moorings, and autonomous underwater vehicles (AUVs). It was **agreed** that the value of monitoring is greatly enhanced by transboundary cooperation and coordination, which can be facilitated by organisations or forums such as the Arctic Council and its components; such coordination should involve scenario planning, scaled approaches, and strategic use of limited resources.

4.2.2 Mitigation

Mitigation in the present context was considered to be a three-part process: (1) measures are implemented based on what is known (likely effectiveness may be evaluated through computer simulations in some cases); (2) the effectiveness of those measures is assessed through monitoring of both human activities and cetaceans; and (3) measures are adapted accordingly if necessary, particularly taking account of observed and expected changes in migratory, feeding, and other behaviour of whales in the Arctic in response to climate change and the rapid decrease in sea ice. The Workshop **stressed** that as for monitoring, mitigation efforts must be designed and scaled appropriately for addressing impacts on subsistence hunting as well as on whales, whether at the individual or population level.

Several aspects of mitigation in relation to industrial activity were highlighted during the discussions.

Regarding ship strike avoidance, the Workshop referred to previous discussions (e.g. Beaulieu Ship Strikes meeting; IWC, 2011b) of potential mitigation methods and their strengths and weaknesses. The most effective is to find ways to separate ships from whales in time and space (e.g. traffic separation schemes) but these may often not be possible. Technological procedures that alert ship captains in 'real time' when they are approaching areas with an elevated likelihood of encountering whales have been instigated in some areas but require evaluation as to their effectiveness. Similarly, the presence of observers onboard has some merit but is dependent on weather, light and the ability of the ship to react appropriately; again this requires further evaluation. Studies show that slowing vessels down to speeds of 10 knots or less will reduce the number of lethal encounters if not encounters themselves. The Workshop **noted** the efforts of the IWC Ship Strikes Working Group in this regard.

To manage vessel noise, ship quieting technologies should be investigated thoroughly in terms of desirability (there may be a trade-off between the goals of reducing noise disturbance and lowering the risk of ship strikes), feasibility (e.g. cost, fuel efficiency), and timescale (e.g. building new ships *vs* retrofitting the existing fleet). Noise mitigation is also needed in the offshore oil and gas industry, particularly when it comes to seismic surveys, platform construction, and pile driving. Time/area closures are among the available tools that are already being developed and applied and that will likely need to be refined and used with greater frequency in the future. The value of tested mitigation measures and a common approach for the whole industry was recognised and reference was made, for example, to the recent work of Nowacek *et al.* (2013) on mitigation approaches for seismic surveys and Moore *et al.* (2012) on a new framework for assessing the effects of anthropogenic sound on marine mammals in a rapidly changing Arctic. Monitoring the effectiveness of mitigation strategies and data sharing within and across industries of the results to increase sample sizes was also stressed.

Oil spill prevention was deemed the most critical area for attention because of the potentially catastrophic effects of a major spill in Arctic waters. Among the key elements of this are activity management (including vessel traffic control, regular inspection of equipment, etc.), relief wells, double-hulled tankers, and worst-case scenario planning. Although participants stressed that oil spill prevention must be the highest priority, they also emphasised the need for a high level of readiness capability to respond when a spill occurs. This requires strategically located caches of response equipment but also, and very importantly, personnel and accommodations available near potential accident sites. It was noted that even in Barrow, one of the larger human settlements in the high Arctic, it would be an enormous challenge to 'host' and help launch a major clean-up event. Finally, the Workshop highlighted: (1) the importance of cross boundary co-operation; (2) the need to conduct realistic training exercises for oil spill responders; and (3) the need to evaluate response techniques and 'best practices' not just under 'normal' conditions but even more importantly under non-ideal (worst-case) conditions.

With respect to compliance with mitigation measures, the Workshop noted that several approaches (mandatory with little or no monitoring, mandatory with enforcement, voluntary, etc.) were used throughout the region. It was emphasised that whatever approach was taken, compliance was more likely if measures were shown to be both effective and cost-effective. The role of 'external' factors such as insurance benefits, fuel efficiency and public approval, etc. was noted.

Among other points raised in the discussions were that: (1) present differences in regulatory regimes among national jurisdictions need to be accounted for in mitigation strategies

but that discussions to try to minimise the differences would prove valuable to both industry and the environment in the long term; (2) operator buy-in is often key to compliance with mitigation measures; (3) there is a longstanding need for robust methods to define, quantify, assess, and manage cumulative impacts (across ranges/borders and over time; see Item 4.1, above); and (4) a truly comprehensive review of risk exposure requires a centralised repository of information as well as appropriate syntheses of the information.

4.2.3 Role of IWC

Participants were asked to consider the role or roles that the IWC might play in bringing together stakeholders (e.g. Arctic Council, indigenous organisations, national and local governments, industry, NGOs) and developing broad guidelines or 'good practice' models across national boundaries and on the high seas.

Given the IWC's ability to compile and interpret information from member nations and experts, as well as the Scientific Committee's expertise in research design and population analyses, it was agreed that the IWC is well placed to advise and collaborate with other bodies such as the IMO and Arctic Council, as well as to lead on cetacean issues. This will require stronger communication networks (e.g. through memorandums of understanding, establishing observer exchanges, formally agreed information exchange mechanisms) that make it possible to set research priorities, identify information gaps, determine how best to fill them, and avoid redundancy or duplication of effort. Towards this end, it was **agreed** that the IWC should endeavour to track the agendas of various working groups within the other organisations (e.g. those on oil spill prevention and response, ship quieting, etc.) and decide where, how, and when to engage. It should also continue to act as a data repository (e.g. ship strikes, disentanglements, stranding events) and make further improvements in access to the data held, as well as liaise with industry and others with respect to acting as a data repository for other information (e.g. related to human activities that may affect cetaceans and mitigation measures and effectiveness).

As a way of ensuring that various industry sectors have a better understanding of the risks their activities might pose to whale populations and subsistence whaling communities, it was suggested that the IWC could help to develop and promote training materials and conduct information sessions through the IMO, Arctic Council, and other bodies. It could also work with industry and national authorities to convince or require companies to contribute cetacean, acoustic, and other environmental data (obtained, for example, from marine mammal observer programs) to a common database or databases (e.g. National Oceanographic Data Centre) and make their information publicly available via the IWC or some other conduit.

In considering more specific activities, the Workshop **emphasised** the strength of the Commission's history of engagement with subsistence whaling organisations and agreed that this should be enhanced. For example, as a repository of cetacean information, the IWC Scientific Committee is almost uniquely positioned to aid in the development of 'hotspot' mapping and other data management tools to identify areas of the Arctic where measures are needed to protect whales and subsistence whaling communities from the impacts of industrial activities and climate change. Data of many kinds (on whale distribution, relative density, aggregation sites and migratory routes, human activities, underwater noise, etc.) from various sources (observations by aboriginal whalers, historical catch records, NAMMCO, industry monitoring programs, scientific surveys, etc.) require integration and synthesis – tasks in which the IWC can either take the lead or be a key participant. The outputs of these tasks would inform and support measures such as the designation of IMO Particularly Sensitive Sea Areas in the Arctic (e.g. Unimak Pass, Bering Strait), other navigation control measures or advisories, time/area closures to particular types of industrial activity, etc. Other specific initiatives for the IWC to consider are: (1) follow the model of the Commission's successful whale disentanglement training effort by establishing a similar program to train industry operators (e.g. the shipping, oil and gas, and tourism sectors) and increase their awareness of and sensitivity to conservation concerns and the cultural aspects of aboriginal subsistence whaling; (2) provide technical support to individual shipping companies such as Automflot and the Northern Sea Route Administration in Russia that are willing to adopt voluntary avoidance areas and ship quieting technology; (3) encourage and facilitate placement of trained marine mammal observers (MMOs) onboard vessels in the Arctic as an approach to monitoring and collecting data on cetaceans; and (4) develop, promote, and disseminate standards or guidelines for cetacean observers, drawing on experience of BOEM, Joint Nature Conservation Committee, Sakhalin Energy and other entities that have established such standards or guidelines, training programmes, etc.

4.2.4 Developing a Regional Model of Cooperation and Collaboration

The Workshop recognised that the challenge of developing a regional model for collaboration on Arctic issues was not within the formal remit of the IWC. However, they identified some of the entities that should be considered as potentially illustrative examples in such an exercise. These include the Association of Arctic Expedition Cruise Operators (voluntary cruise ship limits), the Arctic Marine Mammal Coalition, the 'conflict avoidance agreements' between Alaska North Slope communities and oil and gas companies, the Canadian Cooperative for Wildlife Health (links villages and facilitates information sharing), the Arctic Council and IMO committees and working groups (e.g. CAFF, PAME, EPPR, STWG), the Western Gray Whale Advisory Panel (Sakhalin Energy, IUCN), the Shetland Terminal, the Chukchi Sea Environmental Studies Program, and the recent effort in Greenland to assess or monitor multiple seismic survey footprints, with companies involved sharing costs.

5. CONCLUSION AND WORKSHOP RECOMMENDATIONS

5.1 Overall conclusions

One of the most successful aspects of this intense two-day Workshop was to bring together representatives of many of the key stakeholders in the Arctic to begin to discuss common issues related to the Arctic environment (and especially its cetaceans) and minimising human impacts upon it, at a relatively early time in both the industrial development process and the changes being brought about by climate change. Whilst welcoming the important intergovernmental and other initiatives that are underway (e.g. the work of the Arctic Council and the IMO), it is **important** that the IWC brings its expertise to this existing work in terms of assessing potential negative effects of environmental change and human development on: (a) cetaceans; and (b) subsistence whaling cultures and communities, and contributing to mitigation efforts. Thus a key focus of the Workshop was to examine ways in which the IWC can improve collaboration with the wide variety of stakeholders as soon as possible.

5.1.1 Intergovernmental organisations

One of the key regional organisations is the Arctic Council, which has eight member countries (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and USA) of which all but Canada are also IWC members. In addition it has observer countries and approved intergovernmental and non-governmental observers. The Arctic Council has a series of working groups for which cetacean issues are relevant including those on the Arctic Monitoring and Assessment Programme (AMAP), the Conservation of Arctic Flora and Fauna (CAFF), the Protection of the Arctic Marine Environment (PAME), the Arctic Contaminants Action Program (ACAP), the Sustainable Development Working Group (SDWG) and the Emergency Prevention, Preparedness and Response working group (EPPR). In addition it has a number of relevant programmes and action plans including those on Arctic Biodiversity Assessment (ABA), Circumpolar Biodiversity Monitoring Program (CBMP) and Arctic Climate Impact Assessment. The scope for IWC co-operation at many levels has been highlighted earlier in this report. As recommended more formally below, it is essential that the IWC applies for observer status and that the two Secretariats work together to determine how best co-operation and collaboration can take place.

The IWC already has an Agreement of Cooperation with the IMO, and the Workshop identified ways in which co-operation on the current areas of common interest (which include the Polar Code, MARPOL, a variety of mitigation measures relevant to ship strikes and the reduction of acoustic disturbance) should continue and be expanded. Similarly, the IWC has a number of areas of common interest with other international organisations that deal with cetaceans and hunting including NAMMCO and the JCNB; again, increased co-operation can only improve efforts to safeguard the Arctic environment and communities.

5.1.2 Other stakeholders

In addition to intergovernmental organisations, discussions at the Workshop **highlighted** the importance of increased communication, collaboration and data sharing with those involved in the existing and new developments in the Arctic, especially those associated with oil and gas development, the maritime shipping sector and fishing. Evaluating and understanding actual and potential threats to cetaceans (and subsistence communities) requires not only knowledge of cetaceans but also knowledge of present and likely future human activities at appropriate geographical and temporal scales. Even within the limited time available, a number of important data gaps were identified both with respect to cetaceans and human activities. The common analysis and sharing of data at a large-scale has been shown time and again to be more powerful than examination of the results of small-scale studies. Increased collaboration is addressed more formally in the recommendations below.

5.1.3 Common standards, measures and monitoring across the Arctic

The migratory and trans-national range of most Arctic cetaceans highlights the need for concerted action by all stakeholders both within national waters and the high seas. Obtaining sufficient data on cetaceans and human activities to prioritise threats, develop and implement mitigation measures (and monitor to ensure that those measures are successful) requires high levels of co-operation, scientific effort, political will and data sharing. The Workshop **agreed** that this need could provide a valuable catalyst to developing an agreed framework or frameworks within the region to begin to explore the development of common approaches on a number of important matters, all of which can be seen as advantageous not only for the environment but also for industry who will be able to have a common approach whether they are operating within national waters of one or more countries or on the high seas. Such issues should include:

(a) common standards for environmental impact assessments for new human activities (both in terms of requirements, scientific standards and methods of evaluation) taking into account synergistic and cumulative effects on cetaceans and other components of the environment;
(b) common standards for effective mitigation measures and mechanisms for ensuring compliance including evaluation of their success (or otherwise);
(c) common scientific research efforts and programmes to assess threats, develop mitigation measures and monitor the status of cetaceans over time;
(d) common resources and action plans to deal with catastrophic events such as oil spills; and
(e) agreement on how to address issues of conflicting priorities across the region (e.g. oil and gas development in one area against subsistence hunting in another).

The Workshop recognises that these are complex and difficult issues involving many disciplines, stakeholders and regulatory bodies but **stresses** their long-term importance to the future of the Arctic from a human and environmental perspective. The Arctic Council appears to be the most appropriate framework to take this forward. The Workshop believes that the IWC can contribute to this work in a number of ways ranging from the provision of expertise, information and mechanisms for data sharing through to encouragement of international collaboration both within the IWC itself and by encouraging participation by IWC member nations working in different organisations and nationally. An important challenge for the IWC is to determine the details of how best it can encourage and contribute to such a major effort in a timely and comprehensive manner.

5.1.4 Some key areas of IWC expertise in relation to the Arctic

The key areas of provision of expertise/advice by the IWC and its subsidiary bodies include the following.

(a) Provision of advice on appropriate methods for cetacean status assessment, risk and population modelling, spatial and habitat modelling, dealing with uncertainty, monitoring strategies and evaluation of mitigation strategies (Scientific Committee and Conservation Committee).
(b) Summary of present knowledge of cetacean population status, distribution and movements, density and critical habitat (Scientific Committee).
(c) Identification of high risk areas for cetaceans (in time and space) and known/projected human activities where possible – identification of where data are insufficient and how to obtain the requisite data where not (Scientific Committee).
(d) Evaluation of actual or potential risks by species and/or region based on expected timelines of human activities including monitoring (Scientific Committee).
(e) Experience in data sharing agreements and centralised databases (Scientific Committee).

(f) Development and evaluation of mitigation approaches (Scientific Committee, Conservation Committee, Whale Killing Methods And Associated Animal Welfare Issues Working Group).
(g) Information on subsistence hunting and communities (including consideration of traditional knowledge) along with actual or potential threats to this way of life posed by other human activities (Scientific Committee and Aboriginal Subsistence Whaling Sub-Committee).

5.2 Priority recommendations

The recommendations in this section represent the participants' contributions, and are represented as recommendations from the Workshop. The Workshop **strongly emphasised** that the IWC has an important role to play in the protection of the Arctic environment and its subsistence whaling communities. An important challenge for the IWC is to determine the details of how best it can encourage and contribute to such a major effort in a timely and comprehensive manner. It also **recommends** that the IWC considers including a standing agenda item on the Arctic at each biennial meeting to consolidate the progress made by its subsidiary bodies and the Secretariat during intersessional periods and to discuss future actions.

5.2.1 Increased co-operation with the Arctic Council

The Workshop **recognises** the importance of the work already underway by the Arctic Council and its working groups and programmes (see Item 5.1.1). As a matter of highest priority, it **strongly recommends** that the IWC Secretariat:

(1) approaches the Arctic Council requesting observer status and provides as part of that request a short summary of the types of expertise the IWC can provide (see Item 5.1.4) as well as a copy of the present report;
(2) liaises with the Arctic Council Secretariat and chairs of the various Arctic Council working groups to determine how best the IWC can contribute to and participate in their work, including cetacean-related aspects of the development of common standards, measures and monitoring across the Arctic (see Item 5.1.3);
(3) invites the Arctic Council to participate in relevant IWC meetings and Workshops, including those of Committees, sub-committees and working groups;
(4) liaises with the Arctic Council over the need for a formal Memorandum of Understanding between the two bodies, as appropriate;
(5) invites the Arctic Council to publicise the IWC global ship strikes database and encourage member nations, observer nations and observers to submit data to the database to allow a better characterisation of the issue for the Arctic; and
(6) encourages the Arctic Council to continue to recognise the importance of taking into account the needs of subsistence whaling communities and offers to provide information on IWC regulated hunts.

In addition, the Workshop **requests** that the Commission develops an approach to funding IWC participation at relevant meetings of the Arctic Council and its working groups.

5.2.2 Increased co-operation with IMO

The Workshop **acknowledges** the work already being undertaken by the IWC Secretariat and member nations within the IMO on matters related to ship strikes and noise. In particular, it **commends** the work of the Scientific Committee and the Conservation Committee's Ship Strikes Working Group in this regard.

The Workshop **recommends** increased co-operation by the IWC (Secretariat and member nations) with IMO with respect to mitigation measures for threats to cetaceans (e.g. Traffic Separation Schemes, speed restrictions, noise reduction) and increased awareness of the issue of ship strikes and the importance of the IWC global ship strikes database. It **strongly** urges Arctic nations to submit data to the IWC database to allow priorities for action to be developed, and referred to the July 2014 IWC Workshop on ship strikes as an appropriate place to take this general issue forward.

One of the most important IMO initiatives related to the Arctic is the development of a mandatory international code of safety for ships operating in polar waters (the 'Polar Code'), to cover the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the polar waters. The Workshop **strongly endorses** the need for such a code and **commends** the excellent work carried out to date. It **urges** IWC member nations and others to support the finalisation and ratification of the Polar Code as soon as possible.

5.2.3 Increased co-operation with stakeholders

An important component of the Workshop was to bring together a variety of stakeholders from intergovernmental organisations, member states, national agencies, industry, subsistence communities and NGOs. The Workshop **agrees** that effective mitigation requires *inter alia* participation of all stakeholders from an early stage in the process from identifying whether problems exist, developing mitigation measures, addressing competing stakeholder priorities and developing compliance and monitoring measures.

In an IWC context, the Workshop **recommends** the following.

(1) Stakeholder participation is encouraged in relevant meetings of the IWC and its subsidiary bodies, as well as meetings of other intergovernmental organisations such as the Arctic Council and national authorities.
(2) The IWC Secretariat, in consultation with others (e.g. the Arctic Council and IMO secretariats), draws up a list of relevant international and national stakeholder bodies for the Arctic region, in light of the discussions at this Workshop that prioritised the following: oil and gas operations, vessel traffic (of many kinds including transport, tourism/whale watching, fishing, servicing oil and gas operations), fishing activities and hunting.
(3) The IWC Secretariat contacts the identified organisations with a copy of the present Workshop report and subsequent Commission discussions of it, expressing the interest of the IWC in co-operating and providing advice on issues of mutual interest including: (1) the sharing of scientific expertise (see Item 5.1.4); (2) assistance with issues of data sharing and common field work and analyses; and (3) information on subsistence hunts.
(4) The IWC considers additional ways (including possible expansion of the Commission's successful whale disentanglement training effort) to increase the awareness of and sensitivity of industry operators (e.g. the shipping, oil and gas, fishing and tourism sectors) to conservation concerns and the cultural aspects of aboriginal subsistence whaling.
(5) The IWC considers mechanisms to provide technical support to individual companies or industry bodies.

5.2.4 Scientific matters

The Workshop **recognises** the importance of a strong scientific foundation to the evaluation and prioritisation of threats and subsequent development, implementation and monitoring of mitigation measures. The IWC Scientific Committee is one of the foremost bodies for cetacean conservation science and has considerable expertise in many relevant topics identified at the present Workshop (e.g. see Item 4.1). It also acknowledges the work of other bodies including NAMMCO, JCNB and national agencies. In the time available, it was clearly not practical for the participants to summarise all of the available scientific information available for the Arctic or to specify other than in broad terms, the most important data gaps and how these might be addressed.

The Workshop **recommends** that the IWC Scientific Committee be requested to:

(1) develop a summary of present knowledge of cetacean population status, distribution and movements, density and important habitat of the Arctic species;
(2) develop plans for a co-hosted specialist workshop or workshops with appropriate stakeholder participation (with a focus on the Arctic and with particular case studies to be determined) on identifying and evaluating threats to cetaceans from human activities including:
    (a) data and analytical requirements (both for cetaceans and human activities) for identifying high risk areas to cetaceans at the correct geographical and temporal scales;
    (b) evaluation of non-direct threats to cetaceans at the population level including chemical pollution, noise, climate change, etc.;
    (c) methods to examine synergistic and cumulative effects of a range of actual and potential threats at the population level (see Item 4.1.3); and
    (d) specific recommendations with respect to data requirements and monitoring for the Arctic region in the light of projected human activities within the region.
(3) collate a summary of advice relevant to the Arctic which it has provided with respect to a number of issues identified at this workshop including: climate change; chronic and acute noise; oil spills, ship strikes, fishery bycatch, habitat degradation; and
(4) work with the IWC Secretariat to increase the prominence, awareness and availability of its advice through the IWC website.

The Workshop also **recommends** that the IWC Scientific Committee contributes to efforts to develop of common standards, measures and monitoring across the Arctic (see Item 5.1.3) with respect to issues related to the effects of human activities on cetaceans.

6. ACKNOWLEDGEMENTS

The Workshop thanked the following individuals and organisations for assisting in making this Workshop a success: Doug DeMaster for his time and expertise serving as Workshop Chair; Teri Rowles, Cheryl Rosa, Sue Moore and Michael Tillman for their time and expertise planning this Workshop and serving as Panel Chairs; the World Wildlife Fund and the United States for contributing resources to support this Workshop; all speakers, breakout group discussion leaders and rapporteurs.

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Annex A

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Annex B

Agenda

DAY 1: MARCH 6, 2014

1. Welcome and introduction
- Welcome and Workshop objectives - Doug DeMaster, Workshop Chair; Director, NMFS
- Alaska Fisheries Science Center
- IWC roles and responsibilities – Simon Brockington, IWC Secretary
- Current IWC Scientific work and policy focus related to the Arctic - Greg Donovan, IWC Head of Science

2. Keynote speaker
- Fran Ulmer, Chair, US Arctic Research Council

3. Framing presentations
- Marine Mammals in the 'New Normal' Arctic - Sue Moore, Senior Scientist, NMFS Office of Science and Technology
- Distribution of endemic cetaceans in relation to hydrocarbon development and commercial shipping in a warming Arctic Randall Reeves, Okapi Wildlife Associates; Chairman, Committee of Scientific Advisors, US Marine Mammal Commission
- Introduction to the Arctic Council Responsibilities and Activities - Allison Reed, NOAA Office of International Affairs

4. Panel on Shipping

Panel Chair should introduce presenters and **objectives** – Dr. Cheryl Rosa, Deputy Director, US Arctic Research Commission

Framing presentation - Lawson Brigham, Distinguished Professor of Geography and Arctic Policy, University of Alaska Fairbanks; Captain, USCG (Ret.): Chair, AMSA (2005-09)

Presentations addressing the following questions

(1) What is the speaker's perspective on the present and future status of Arctic shipping activities (including, but not limited to, commercial, scientific, oil and gas, fishing, and tourism activities) and the impacts on cetacean (e.g., noise, ship strikes, pollution, debris)?
(2) What has been done to date? Are there any lessons learned (e.g., case studies)? What are the knowledge gaps and concerns?
(3) Any recommendations to the IWC for what information would be most useful and how the IWC should prioritise its future work related to the Arctic?

Presenters
- Heike Deggim, Marine Environment Division, International Maritime Organization (IMO)
- James Houck, US Coast Guard
- Henrik Falck, Tschudi Shipping Company, Norway
- Angelia Vanderlaan, Department of Environmental Conservation University of Massachusetts Amherst

5. Panel on Oil and Gas-related Activities

Panel Chair should introduce presenters and objectives – Teri Rowles, Head, Marine Mammal Health and Stranding Response Program, US National Marine Fisheries Service

Framing presentation - Bill Streever, Senior Environmental Studies Advisor, BP Exploration (Alaska) Inc.

Presentations addressing the following questions

(1) What is the speaker's perspective on the present and future status of Arctic oil and gas-related activities and the impacts on cetaceans (e.g. noise, vessels, pollution, spill response and restoration)?
(2) What has been done to-date? Are there any lessons learned? What are the knowledge gaps?
(3) Any recommendations to the IWC for what information would be most useful and how the IWC should prioritise its future work related to the Arctic?

Presenters
- Alexey Knizhnikov, Head, Oil and Gas Environmental Policy, World Wildlife Fund, Russia
- Lori Schwacke, Chief, Oceans and Human Health Branch, National Centers for Coastal Ocean Science, US National Ocean Service
- Mark Everett, Arctic Council Emergency Prevention, Preparedness and Response (EPPR) Working Group; US Coast Guard; Chair of US Alaska Regional Response Team
- James Kendall, Regional Director of Alaska's Outer Continental Shelf Region, US Bureau of Ocean Energy Management
- Michael Macrander, Shell Alaska Venture

6. Panel on Indigenous Focuses on Increased Shipping and Oil and Gas-Related Activities in the Arctic

Panel Chair should introduce presenters and objectives – Michael Tillman, Chair, IWC Aboriginal Subsistence Whaling Working Group; US Marine Mammal Commission

Presentations

(1) What is the speaker's perspective on the present and future status of Arctic shipping and oil and gas-related activities? What is the speaker's perspective on the impacts of these activities on cetaceans?
(2) What each group done to assist with management of shipping and/or oil and gas-related activities in his region? Are there any lessons learned? What are the knowledge gaps and concerns?
(3) Any recommendations to the IWC for what information would be most useful and how the IWC should prioritise its future work related to the Arctic?

Presenters
- Eduard Zdor and Edward Rypkhirgin, Russia, Traditional Marine Mammal Hunters of Chukotka
- Fernando Ugarte, Greenland Institute of Natural Resources
- George Noongwook, US, Alaska Eskimo Whaling Commission

DAY 2: MARCH 7, 2014

7. Recap of Day 1 and Plan for Day 2
Workshop Chair

8. Highlights of Panels and potential recommendations/ areas for breakout groups to consider

8.1 Shipping Panel

8.2 Oil and gas related activities Panel

8.1 Indigenous focus Panel

9. Introduction of break out group exercise by Theme leaders

10. Breakout Groups on Theme 1
Group Leaders: Greg Donovan (Theme Lead), Lori Quakenbush, Arne Bjørge, Sue Moore (Theme Lead), Robert Suydam, Fernando Ugarte

Theme 1: Actual and potential threats, filling knowledge gaps and collaborative studies
Threats and priorities
- What are the major actual and potential threats to cetaceans from new activities?
- What are the main data gaps in assessing/prioritising these from the perspective of cetacean data and data on human activities?
- Given available knowledge, how would you prioritise potential and actual threats in terms of actual or likely threats, severity of threat, likely extent of threat, singly and cumulatively?

Collaboration and data
What are stakeholders views on: (a) collaborative data collection and data sharing (wrt both cetaceans *and* human activities) to increase efficiency and consistency of approach.

How data collection efforts might these be prioritised with an emphasis on how this may have been done elsewhere and by whom.

Identify potential for co-operation with other bodies (e.g. Arctic Council, Indigenous organisations, National and local governments, industry and NGOs) including those for whom cetaceans not a priority or not the only priority.

11. Breakout Groups on Theme 2
Randall Reeves (Theme Lead), Peter Thomas, Layla Hughes, Simon Brockington (Theme Lead), Doug DeMaster, Michael Macrander.

Theme 2: Monitoring and mitigation, guidelines/ principles and a collaborative model for the Arctic
Mitigation
What are the main issues wrt future **monitoring** (of cetaceans and humans) and **mitigation** (of human activities)? This will including data collection, sharing and analysis in assessing efficacy and implementation of mitigation measures? What examples already exist?

Role of IWC
What facilitating or other role could the IWC play in bringing stakeholders together (e.g. Arctic Council, Indigenous organisations, National and local governments, industry and NGOs) and developing **broad guidelines/practice models** across national boundaries and in high seas. Can a degree of commonality assist stakeholders? Has this been achieved in other places and if so, how?

Model for the region
Can we develop the outline of a suitable model for collaboration on Arctic Issues and what should it cover (can include issue from both themes)?

12. Breakout group presentations of recommendations; Plenary discussion

13. Next steps and closing remarks
Workshop Chair

Annex C

Summaries of Presentations

MARINE MAMMALS IN THE 'NEW NORMAL' ARCTIC

Sue E. Moore

Arctic climate continues to change more than twice as fast than at lower latitudes due to coupled positive feedback processes. Sea ice cover and thickness continue to decrease, while air and water temperatures increase, suggesting that the Arctic climate system has reached a 'New Normal' state (Jeffries *et al.*, 2013). Extensive ice-free regions now occur each year in the Pacific Arctic sector, with record-low sea ice extents in 2007 and 2012. In response, walruses now often haul out by the thousands along the NW Alaska coast in late summer, and summertime reports of harbor porpoise, humpback, fin and minke whales in the Chukchi Sea suggest these temperate species now routinely occur there (Clarke *et al.*, 2013). In 2010, satellite tagged bowhead whales from Atlantic and Pacific populations met in the Northwest Passage, an overlap thought precluded by sea ice since the Holocene (Heide-Jorgensen *et al.*, 2012). Concurrently, lower trophic level plankton and benthic fauna are responding to the 'new' environmental forcing at variable time and space scales (Post *et al.*, 2013). Changes to these prey populations can have energetic impacts to marine mammals, as well as alter trophic transfer of biotoxins and contaminants (Altizer *et al.*, 2013). In addition, increasing offshore anthropogenic activities can alter marine mammal exposure and responses to infectious disease, underwater sound and potential injury/mortality from ship strikes. International efforts such as the Arctic Council/Circumpolar Biodiversity Monitoring Program (CBMP)[10], and the Pacific-sector-focused Distributed Biological Observatory[11] can provide an environmental foundation for the development of a Marine Mammal Health Mapping tool, envisioned as a component of the U.S. Integrated Ocean Observing System (IOOS)[12]. An overarching goal is to identify 'New Normal' health-ecology patterns for marine mammals, as a foundation for integrative research and adaptive management.

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[10] *http://www.caff.is/marine.*
[11] *http://www.arctic.noaa.gov/dbo/.*
[12] *http://www.sccoos.org/projects/mmhealth/.*

DISTRIBUTION OF ENDEMIC CETACEANS IN RELATION TO HYDROCARBON DEVELOPMENT AND COMMERCIAL SHIPPING IN A WARMING ARCTIC

Randy Reeves

Abstract of: Reeves, R.R., Ewins, P.J. Agbayani, S. Heide-Jørgensen, M.P. Kovacs, K.M. Lydersen, C. Suydam, R. Elliott, Polet, W.G. van Dijk Y. and Blijleven, R.. 2014. Distribution of endemic cetaceans in relation to hydrocarbon development and commercial shipping in a warming Arctic. *Marine Policy* 44:375-89.

The Arctic is one of the fastest-changing parts of the planet. Global climate change is already having major impacts on arctic ecosystems. Increasing temperatures and reductions in sea ice are particular conservation concerns for ice-associated species, including three endemic cetaceans that have evolved in or joined the arctic sympagic community over the last 5 M years. Sea ice losses are also a major stimulant to increased industrial interest in the Arctic in previously ice-covered areas. The impacts of climate change are expected to continue and will likely intensify in coming decades. This paper summarises information on the distribution and movement patterns of the three ice-associated cetacean species that reside year-round in the Arctic, the narwhal (*Monodon monoceros*), beluga (white whale, *Delphinapterus leucas*), and bowhead whale (*Balaena mysticetus*). It maps their current distribution and identifies areas of seasonal aggregation, particularly focussing on high-density occurrences during the summer. Sites of oil and gas exploration and development and routes used for commercial shipping in the Arctic are compared with the distribution patterns of the whales, with the aim of highlighting areas of special concern for conservation. Measures that should be considered to mitigate the impacts of human activities on these arctic whales and the aboriginal people who depend on them for subsistence include: careful planning of ship traffic lanes (re-routing if necessary) and ship speed restrictions; temporal or spatial closures of specified areas (e.g. where critical processes for whales such as calving, calf rearing, resting, or intense feeding takes place) to specific types of industrial activity; strict regulation of seismic surveys and other sources of loud underwater noise; and close and sustained monitoring of whale populations in order to track their responses to environmental disturbance.

FRAMING THE ISSUES: ARCTIC MARINE OPERATIONS AND SHIPPING

Lawson W. Brigham

Globalisation and regional climate change are influencing the maritime Arctic in significant ways early in the 21st century. The Arctic is increasingly being linked to global commodity markets by offshore and onshore natural resource developments, and these economic drivers require new marine transportation systems. Arctic marine access is changing as sea ice undergoes a profound retreat and transformation in extent, thickness and character influenced by global and regional warming. These physical

changes in turn have implications for increasing access and allowing potential, longer seasons of navigation. All of these economic and environmental changes present unique challenges to the existing legal and regulatory structures which cannot meet the needs today for enhanced Arctic marine safety and marine environmental protection. These challenges in the 'new' maritime Arctic will require historic levels of cooperation among the eight Arctic states and broad engagement with the indigenous peoples of the Arctic, many non-Arctic stakeholders, and a host of actors within the global maritime industry. Arctic-specific issues are increasingly being discussed and actions taken at such bodies as the International Maritime Organization (IMO), the International Hydrographic Organization, and World Meteorological Organization. It is important that the International Whaling Commission also respond within its mandate to the potential impacts on cetaceans of the increasing marine activities throughout the Arctic marine environment.

The IMO is deeply involved in developing a mandatory Polar Code for ships operating in polar waters, moving beyond a set of voluntary guidelines created and promulgated early this century. A new, binding Polar Code will provide a framework of rules and regulations to enhance Arctic marine safety and environmental protection. Key will be a set of measures to reduce risk for ships operating in polar waters by: requiring new ships' construction standards; requiring polar marine safety equipment; and, enhancing the experience and international standards of training for pilothouse personal and other members of the crew. Also being addressed are environmental, pollution prevention measures for oil, noxious liquid substances, sewage, and garbage from ships. The Polar Code, hopefully to be implemented by 2017, will be an historic and critical instrument for protection of Arctic people, polar mariners, marine life and the Arctic marine environment. The Polar Code is highly relevant to the emerging work of the IWC in developing impact mitigation measures for cetaceans

The Arctic Council's Arctic Marine Shipping Assessment (AMSA) released in April 2009 remains the framework for the Council's response to enhancing Arctic marine safety and marine environmental protection. AMSA is a comprehensive study that can be viewed as: a strategic guide to a host of Arctic actors and stakeholders; a baseline assessment and snapshot of Arctic marine activity early in the 21st century; and, as a policy document for the Arctic Council, since the report was negotiated and consensus was reached for its approval by the eight Arctic Ministers. An AMSA scenarios creation effort identified nearly 120 driving forces and key uncertainties that will shape the future of Arctic marine activity and use to 2050. Two of these driving forces were considered primary and they anchor, as axes of uncertainty, a scenarios matrix used to develop a set of plausible futures: resources and trade (the level of demand for Arctic natural resources and trade), and governance (the degree of relative stability of rules and standards for marine use in the Arctic and internationally). The scenarios work indicated the central role of Arctic natural resource development driving increased Arctic marine activity. Full consideration was given to climate change, and continued retreat of Arctic sea ice is assumed to provide for improved marine access and potentially longer seasons of navigation. A set of 17 AMSA recommendations lays out a strategy for the Arctic Council to address three themes: Enhancing Arctic Marine Safety; Protecting Arctic People and the Environment; and, Building the Arctic Marine infrastructure. One of the AMSA recommendations makes specific reference to Addressing Impacts on Marine Mammals:

> *That the Arctic states decide to engage with relevant international organisations to further assess the effects on marine mammals due to ship noise, disturbance and strikes in Arctic waters; and consider, where needed, to work with the IMO in developing and implementing mitigation strategies.*

As AMSA addresses a wide range of issues related to indigenous communities, the legal governance of the Arctic Ocean, today's Arctic marine infrastructure deficit, and significant environmental issues (most serious being the release of oil in Arctic waters), this study is considered a holistic assessment providing an integrated framework from which to address the challenges of expanded Arctic marine use.

In summary the following key issues are noted as important to the Workshop discussions on measures to protect cetaceans.

- Most of the Arctic traffic increases in large ships are by tankers, bulk carriers and LNG carriers, as well as cruise ships and offshore support vessels. Destinational voyages, rather than trans-Arctic voyages, are the primary mode of Arctic navigation.
- Arctic shipping remains seasonal in most regions with possible extensions to the length of the navigation season for the eastern Northern Sea Route and through Bering Strait. In some cases the ship navigation seasons mirror the cetacean migration routes in spring and autumn.
- Arctic traffic monitoring and awareness have been enhanced by automatic identification systems (AIS) whose signals are received by satellite and land-based receivers. An agreement should be reached by the Arctic states to share ship traffic data across borders.
- There should be a balance between the basic freedom of navigation expressed in UNCLOS and any special measures developed to protect Arctic cetaceans.
- Communications between ship operators and indigenous hunters must be enhanced. Regional and local agreements can be developed to mitigate interaction or conflict between these Arctic marine users.
- Any Arctic ship routing measures must be flexible and seasonally implemented.
- AMSA should be used by the IWC as a strategic guide to address the range of ongoing issues related to protecting Arctic people and the environment. And, the IWC should follow closely the development and implementation of the mandatory IMO Polar Code.

SUMMARY OF PRESENTATION ON ARCTIC SHIPPING AND IMPACTS ON CETACEANS

Heike Deggim

Ships operating in the polar environments are exposed to a number of unique risks. Poor weather conditions and the relative lack of good charts, communication systems and other navigational aids pose challenges for mariners. The remoteness of the areas makes rescue or cleanup operations difficult and costly. Cold temperatures may reduce the effectiveness of numerous components of the ship, ranging from deck machinery and emergency equipment to sea suctions. When ice is present, it can impose additional loads on the hull, propulsion system and appendages.

Over the last 20 years or so, the International Maritime Organization (IMO)[13] has developed a raft of requirements, guidelines and recommendations regarding navigation

[13]IMO, the International Maritime Organization, is the United Nations specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships.

in polar waters, and this work is now culminating in the development of a mandatory International Code for ships operating in polar waters (the Polar Code). The speaker will give an update on the progress made to date with the work on the Polar Code which is expected to be finalised in 2014 and briefly outline the structure and contents of the new Code.

With regard to the prevention of ship strikes with cetaceans, the speaker will also address relevant IMO provisions, in particular mandatory ship reporting systems and special guidance to minimise such ship strikes. Furthermore, a brief update on IMO's work concerning particular sensitive sea areas (PSSAs) and guidelines for minimising underwater noise from commercial ships will be presented.

BERING STRAIT SHIPPING PRESENTATION

James Houck

The presentation contrasts the current level of large ship traffic transiting the Bering Strait with predicted traffic levels. It then outlines proposed routing measures to mitigate the effects of additional shipping while, simultaneously, increasing safety and predictability in the Bering Strait.

MITIGATION OF RIGHT WHALE VESSEL STRIKES IN CANADIAN WATERS THROUGH RESEARCH, EDUCATION, MITIGATION, MONITORING, AND INDUSTRY STEWARDSHIP

M.W. Brown[1, 2, 3], A.S.M. Vanderlaan[4, 5] and C.T. Taggart[4]

Vessel strikes are a threat to large whales worldwide and represent a source and level of mortality for North Atlantic right whales (*Eubalaena glacialis*) that is hampering the recovery of this highly endangered species throughout its known range along the eastern seaboard of North America. In the 1990s, in the absence of government legislation mandating action in Canada to address and reduce vessel strike mortality, a unique approach emerged. Here we present the past 20-year development and implementation of regulations that resulted in Canada gaining two internationally sanctioned, area specific strategies that minimised the risk of vessel-strikes in two critical habitat areas – once having determined that mariner awareness programs were insufficient. Our analyses and efforts first resulted in the Bay of Fundy Traffic Separation Scheme (TSS), mandatory for all vessels greater than 20 meters in length, being amended through the International Maritime Organization (IMO) and implemented by Canada in 2003. The amendment resulted in a reduction of relative risk by 62% when measured throughout the Bay of Fundy. Similar analyses and efforts resulted in the IMO adopting a recommendatory and seasonal (June through December) area to be avoided (ATBA) that was implemented by Canada on Roseway Basin (SW Nova Scotia). For the ATBA, we initiated the Marine Stewardship Recognition Program (MSRP) that uses vessel-tracking data (Automatic Identification System receivers) to measure vessel-operator compliance with the ATBA. The measurements are communicated directly to the commercial and governmental fleet navigating in the region in an attempt to further reduce the risk of vessel strikes through fleet-wide compliance. Vessel operator compliance was initially high and increased from 71% in 2008 to 80% in 2009; a relative risk reduction of ~80%. However, the goal of achieving 100% compliance with the Roseway Basin ATBA has yet to be achieved, and the MSRP continues its efforts to solicit greater fleet compliance. The insights gained from scientists and industry working with government to manage human activities to better protect North Atlantic right whales serves as a model for others who are seeking greater protection of whale species that face similar risks elsewhere in the world.

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MARINE ENVIRONMENTAL PROTECTION (MEP) IN ALASKA

Mark Everett

This presentation describes marine environmental protection (MEP) functions and participants and US Coast Guard MEP responsibilities, generally. It then focuses more specifically on how Seventeenth Coast Guard District organises and executes its MEP roles through interagency, intergovernmental, and international fora. There is additional optional content on the Arctic Council *Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic.*

BOEM OUTER CONTINENTAL SHELF ARCTIC PROGRAMS AND ACTIVITIES

James Kendall

The Bureau of Ocean Energy Management (BOEM) has the responsibility for managing the development of energy and mineral resources on the US Outer Continental Shelf (OCS) in an environmentally sound and safe manner. Resource related activities include vessels associated with exploratory drilling, development, and production operations; geological and geophysical surveys; and research. Arctic OCS activities have occurred in the Bering, Chukchi, and Beaufort Seas. A review of past and current OCS activities indicate that activity levels peaked in the Bering Sea in the mid-1970s to mid-1980s (and then ceased); and peaked in the Arctic seas in the early 1980s to early 1990s followed by nearly two decades of very little activity. Recent Arctic OCS activities are focused in the Chukchi and Beaufort Seas.

In 2012, two exploratory drilling operations occurred, the first in over a decade in the Beaufort Sea and the first in over two decades in the Chukchi Sea. These operations involved over 20 vessels. We expect any future exploratory drilling to involve a comparable number of vessels and level of activity to that observed in 2012.

Recent (2012) energy resource related vessels accounted for 10% or less of total vessel activity in the US Arctic. Vessel operations related to energy resources in the Arctic OCS are required by the BOEM to employ protected species observers, operate at generally lower speeds than other vessels, are restricted in certain areas and times to avoid conflict with subsistence activities, employ oil and hazardous material spill plans, and, for seismic surveys, have exclusion zones for marine mammals with mitigation shut-down and start-up procedures for the seismic sound sources. Any sound-based exclusion zones specified in Incidental Take Authorizations for protection of marine mammals from harassment are also honored by the BOEM.

The behaviour and habitat characteristics of US Arctic marine mammals have been studied for 40 years by the BOEM. Combining this research with Traditional Knowledge from local subsistence hunters, adaptive mitigation measures were developed and implemented to protect subsistence uses. These mitigation measures will continue to evolve by incorporating ongoing studies.

PERSPECTIVES OF CHUKOTKAN HUNTERS

Eduard Zdor and Edward Rypkhirgin

ChAZTO (Association of Traditional Marine Mammal Hunters of Chukotka) considers that it is necessary to provide the transparency of all the processes, which are related to the traditional subsistence of Chukotka indigenous peoples. Our unique culture, the maritime culture of Chukchi and Eskimo, essentially depends on the sea conditions and its inhabitants. That is why it is necessary to let every person of the Chukotka coastal village be aware what will happen in the waters of the Chukchi Sea. This information must be full and competent. We mean, that the representatives of all oil companies must organise community meeting at all levels - village, district and regional organisations of Chukotka indigenous peoples. Besides, it is very important, the oil companies must provide funding to the indigenous peoples organisations in order to set the meetings and inform local people on the matters of future plans of work in the sea. They also must provide the possibility to Chukotka local people to hire experts such as ecologists, anthropologists, etc., so that the last ones will do their independent expertise on how the work in the sea affects marine mammals habitat and traditional subsistence of Chukotka indigenous peoples.

The same requirement applies to the questions regarding increasing of the shipping in the Bering Strait. Possibly, some international foundation and international shipping organisations must provide funding. In general, everybody, who is in this realm should do this.

We want to emphasise, that all that we suggest does not decline similar activities on our federal and regional levels.

What is your point of view on the current and future status of the arctic shipping and gas activities regarding oil in your region? How do you think those activities will affect cetaceans?

ChAZTO is aware that the industrial development of the Arctic is inevitable, if we take into consideration global climate change, and even more - mankind needs natural resources such as oil, gas and bio-resources.

Still, we, the peoples of Chukotka do not see any clear fact that the modern oil and gas industry, as long as shipping, are able to guaranty the prevention of any accidents in the Arctic and, even more, to effectively eliminate their consequences. More than that, the recent tragedies demonstrate us opposite. They are the tragedy with Exxon Valdez in 1989, the wreck of the drilling platform 'Kolskaya' in the Sea of Okhotsk in 2012, the Shell drilling platform that wrecked near Alaska coast in 2012, the messages from the dwellers of the both sides of the Bering Strait regarding birds and seals covered with oil.

Shell, responsible for the recent oil spills in Nigeria and Great Britain, asserts us that it will be able to clean up 90% of the spilled oil in Alaska. At the same time, the Alaska Geographical Service considers to clean only 20%. After the shipwreck of the 'Deepwater Horizon' only 3% of the oil was cleaned and 9% after Exxon Valdez.

When creating the strategy of the industrial development of the Arctic we would like three parties find a compromise. We do realise that the transnational corporations want to earn money; we know that various state governments wish to provide economic security and diminish their dependence from the energy sources export; but we are also aware about the citizens' aspiration to live in world of ecological security, which is able to reproduce enough its flora and fauna. In our message we point to the uniqueness of the Bering Strait - they key habitat for hundred thousands marine mammals and millions of birds.

In this regard, the role of such international organisations as IWC increases. It brings together governments, international organisations and non-governmental organisations from many countries.

ChAZTO is pretty confident that with the increasing of the industrial activities, during the seismic exploration and possible oil extraction on the shelf, the whales will be forced to change their migration routes. It won't only affect the coastal village residents directly, will disturb their traditional seasonal whale and walrus hunting. We think that the industrial development near the Bering Strait might change their habitat as well.

In its turn it means that people will stop go hunting to the sea, there will be nothing to harvest and, as a result, there will be nothing to bring home for dinner. Nowadays, the hidden unemployment in the coastal villages is preliminary from 60% up to 80%. There is a high probability of the humanitarian disaster. We must mention that besides some technological obstacles of getting food, our small ethnicities face another serious issue – the absence of OUR traditional subsistence will lead to the death of our local languages, people will stop to preserve their traditions and will lose their ethnic identity. Even if oil companies pay enough compensations in order to calm people down, still, the dying out of Chukotka indigenous peoples will be the natural phenomenon because the migration routes of the whales and walruses will change due to the industrial development of the Arctic.

We also think that if some forecasts on disappearing summer ice come true then it will lead to the multiple increasing of the shipping - tankers and large-capacity containers ships. No doubt, the pressure on the Bering Strait might be critical. It is necessary to consider these risks.

What did your group do to provide any help in governing shipping and/or oil and gas activities in your region? Any results? What are the gaps in knowledge and what are the problem?

Our organisation held some meetings devoted to those questions. We tried to attract attention of our regional and federal authorities to the fact that nobody invited Chukotka indigenous peoples to participate (or at least to inform them) in the questions of the shipping rules regulations in the Bering Strait. However, we received typical answers that the question was under the process. More, our local authorities announced that the Russia's geopolitical interests are more important the Chukotka coastal village residents and their own interests.

State company 'Rosneft' (Russian oil) has been investigating for several years the possibility of the oil extraction on the shelf of the Chukchi Sea. Unfortunately, we could not establish the dialog with this company still. There was not any public meeting on geophysical work in the Chukchi Sea. The meeting was held as the questionnaire or just demonstrating company's plans on the walls. ChAZTO had no opportunity to present our position and questions. There should be meeting on the 5 March, but we do not have either invitation or any affordable information regarding this meeting.

In the fall 2013, ChAZTO sent its application on registration the community ecological expertise in two municipal districts of Chukotka. Our request was declined. After this, we asked for help for some Russian ecological organisations. One of them was WWF-Russia and another one was Center of the Wild Nature Preservation. They supported us. Then, after long resistance and only when the public prosecutor interfered into the lawless actions of the municipal authorities, there was second registration of the application from the Center of the Wild Nature Preservation.

We consider, that such attitude and relation, to the wish of the civil society to get full information can be explained by the fact that Rosneft received those sites without any competition. We suggest that only some bureaucrats made this decision and as a result it might be possible that there will be some problems with providing ecological security by standards.

What kind of recommendation could you suggest regarding information, which is necessary to solve this issue and how IWC should determine its priorities in its work connected with Arctic?

Answering this question, we think that IWC should send a request to the governments of the USA and Russia and ask to inform on their existing plans regarding oil extraction and development of shipping in the North West Route and Northern Sea Route. They should answer if there are effective ways of security and safety for the Bering Sea and nearby seas, traditional subsistence of Chukotka and Alaska indigenous peoples.

We must know what the rules in getting the license for the resource extraction are. Will the companies follow any ecological standards? Will the indigenous peoples participate in the decision taking of the important questions regarding the preservation of the Bering Strait?

ChAZTO would like to emphasise that lately it has been actual to use quasi-governmental organisations, which sign various agreements and other documents on the agreement on behalf of indigenous people without considering their real opinion. Another issue is the one-sided presentation of the industrial development of the region by the authorities when they, with their own weight, suppress the population's wish to get full information, rate risks and take right decision. That happened, for instance, in Pevek on hearing of PATES (floating atomic power station), which is going to be built in Pevek.

GREENLAND VIEWS ON WHALES, OIL AND SHIPPING

Fernando Ugarte (Greenland Institute of Natural Resources), Leif Fontaine (Organization of Fishermen and Hunters - KNAPK) and Amalie Jessen (Department of Fisheries, Hunting and Agriculture)

In Greenland, all natural resources, including whales are managed by the Government of Greenland, which is composed by a majority of local people (kalaallit = ethnic Inuit). When it comes to whales, stakeholders include local resource users (hunters and local commercial and private whale watchers); managers (central government and municipal authorities) and scientific advisors (Greenland Institute of Natural Resources - GINR, the Danish Centre for Energy and Environment – DCE and international organisations such as IWC, NAMMCO and JCNB). Seismic hydrocarbon exploration has intensified during the last decades and we expect that seismic pulses will be part of the acoustic landscape in the ice-free periods during many years to come. Shipping has also increased and is predicted to increase more in the future. Marine traffic includes both off shore and in shore fisheries, as well as hunting and leisure boating, tourism and transport of goods and people.

The view of the hunters regarding the effect of this increase of human activities in whales is difficult to summarise because it varies according to the individual hunter, depending of factors such as the region where they live, the level of impact they experience or the information they are exposed to. A combined interview and field study concluded that narwhal hunters in Melville Bay did not perceive any substantial impact of seismic exploration on the catch of narwhals in 2012, a year when intense seismic surveys were carried out, and when the hunt was good. In 2013, when there were less seismic surveys, the hunt was bad and the issue of disturbance of cetaceans had been aired on the media and by NGO's, the Inuit Circumpolar Council (ICC) and the Organization of Fishermen and Hunters (KNAPK) backed up a number of hunters that were worried about the possibility that poor catches and behavioural changes observed on the narwhals could be due to disturbance from Seismic exploration.

In October 2013, KNAPK asked ICC for support to propose: (1) better mapping of the natural resources; (2) more consultation and agreements with the locals before industrial activities are started; (3) the creation of a commission of experts on the North Water Polynia (NOW) that should evaluate and discuss the significance of the area; and (4) a ban of commercial activities, including seismic exploration in the NOW until this commission has delivered a report and until an effective contingency response in case of accident or oil spill can be guaranteed. We do not know what the outcome of this request will be.

A sound management of shipping and/or oil and gas-related activities and their impact on whales should include the following components: (1) Gathering of baseline information on the ecosystem and its importance before activities start through multidisciplinary environmental and social studies; (2) mapping of natural resources and areas of cultural and social importance, followed by delineation of protection zones where human activities are limited or excluded; (3) monitoring of vulnerable whale populations at regular intervals during periods of activity, including abundance and distribution (aerial surveys/telemetry), sound exposure levels and occurrence of vociferous animals (passive acoustic monitoring) and perceptions of local users (interviews); (4) dialogue with all stakeholders before activity starts and while activities are taking place; (5) contingency plans in case of accidents, including oil spills; (6) international cooperation to exchange methodology and information; and (7) improved monitoring of vessel activity.

The IWC could contribute by facilitating the international exchange of information through workshops and special publications.

PERSPECTIVES OF THE ALASKA ESKIMO WHALING COMMISSION

George Noongwook

George Noongwook is the Commissioner to the Alaska Eskimo Whaling Commission (AEWC) from Savoonga, Alaska, and past Chair of the AEWC. His presentation addresses how changes in the Arctic are affecting indigenous communities in Alaska and steps being taken by the AEWC to help address those changes. Native communities of arctic Alaska rely on marine mammals as a significant part of their

daily food supply. Hunting, especially of marine mammals, is fundamental to survival in these communities. Given remoteness and harsh conditions, indigenous residents must think and act for themselves. When the IWC moved to ban bowhead whale hunting in 1977, the bowhead subsistence whaling villages came together to form the AEWC as an advocacy and management body to protect bowhead whales and subsistence whaling. Since 1980, the AEWC has managed the Alaskan bowhead whale subsistence hunt through a Cooperative Agreement with the US Department of Commerce/NOAA, within the regime set up by the IWC. The AEWC also works very closely with researchers, combining local knowledge and observations with western science research to enhance understanding of bowhead whales and the ecosystem.

Beginning in the 1980s, offshore oil and gas development started moving into the Alaskan Beaufort and Chukchi Seas, affecting marine uses in the arctic coastal communities. Using local knowledge and western science research, the AEWC undertook negotiations with offshore operators and created the Open Water Season Conflict Avoidance Agreement (CAA), which establishes mitigation measures reducing the adverse impacts of offshore industrial activities, including a communications system and protocols, time-area closures, and reductions in drilling discharges for specific areas. With the recent increases in commercial, recreational, research, and international traffic moving through arctic waters, new issues of safety, food security, and health of the arctic ecosystem arise. Coastal Native communities must have a voice in planning, development of mitigation measures, and in response if that is ever needed. Decisions affecting arctic waters must give priority to the health and food security of local communities. In 2012, the AEWC came together with four other arctic marine mammal hunter groups, local governments, and regional organisations to form the Arctic Marine Mammal Coalition (AMMC), to begin developing measures to protect hunters on the water, marine mammals - especially whales - and the marine ecosystem. The AMMC is working with the US Coast Guard, NOAA, and the Alaska Marine Exchange and hopes to begin working with members of the shipping industry to develop safe practices for western arctic waterways. Goals include the development of an integrated and cooperative communications system, vessel routing measures, the creation of an Arctic Waterway Safety Committee, and strategic uses of the Coast Pilot and the Notice to Mariners.

Report of the Whale Watch Operators Workshop

24-25 May 2013, Brisbane, Australia

Report of the International Whaling Commission Whale Watch Operators Workshop[1]

24-25 May 2013, Brisbane, Australia

1. BACKGROUND

The International Whaling Commission (IWC) and its Working Group on Whalewatching (WGWW) sponsored the Whale Watch Operators Workshop from May 24-25, 2013, in Brisbane, Australia. Conducting this Workshop was an action identified in the WGWW's work plan for 2012-14. Whale watch operators and industry representatives from multiple nations, representing a variety of regions and operation types from both IWC member and non-member nations, were invited to have dialogues with each other and to provide feedback to the IWC WGWW on the suite of actions in the IWC's Five-Year Strategic Plan for Whalewatching (Strategic Plan). This report provides a summary of the Workshop presentations, discussions, and key recommendations identified by participating industry members for the IWC to consider as it moves forward with implementing the Strategic Plan.

2. INTRODUCTION

2.1 Welcome/opening comments

Ryan Wulff, acting IWC Commissioner for the United States (USA) and Chair of the IWC's WGWW, welcomed participants to the Workshop and thanked the Government of Australia for hosting and providing exceptional facilities (see Annex A for a list of participants).

Donna Petrachenko, Australia's IWC Commissioner, expressed the Australian Government's appreciation to the USA for its support of the Workshop, thanked participants for their attendance and acknowledged the importance of whalewatching globally. Petrachenko reinforced the importance of whalewatching as a sustainable non-lethal use of cetaceans, a key conservation initiative for cetaceans, an economic generator, and an initiative that produces conservation benefits

Finally, the Honourable Tony Burke MP, the Australian Minister for Sustainability, Environment, Water, Population and Communities and Minister for the Arts, addressed the Workshop through a video presentation.

2.2 Whalewatching and the IWC

The IWC Executive Secretary, Simon Brockington, set the context of the Workshop, providing background on the IWC including its mandate, membership, structure, function and responsibilities of the IWC Secretariat, and the Convention on the Regulation of Whaling (ICRW). Brockington presented key IWC milestones related to whalewatching, including an IWC request to the USA and Mexico to regulate and manage whale based tourism (1976); establishment of the global moratorium on commercial whaling (1986); an IWC invitation for governments to assess the extent of the economic value of whales (1993); and the addition of whalewatching on the Scientific Committee's agenda (1996). Lastly, Brockington clarified that the IWC does not serve in a regulatory role; instead, the IWC serves as an advisor and as a facilitator.

2.3 IWC's Working Group on Whalewatching

The Chair provided a presentation on the history and purpose of the WGWW. The WGWW was convened by the Conservation Committee in 2008 in response to the rapid growth of the whalewatching globally and the need to promote best practice management. WGWW membership consists of Australia, Brazil, Chile, Costa Rica, Ecuador, France, Mexico, New Zealand, Peru, South Africa, United Kingdom and the United States. The WGWW also includes four members of the Scientific Committee and two industry representatives with rotating two-year terms, currently held by operators from Australia and Mexico. The role of the WGWW is to implement the Strategic Plan on behalf of the Conservation Committee, in coordination with the Scientific Committee; provide oversight of actions and products under the Strategic Plan, including development of a web-based living handbook; assist in coordinating the work of the Conservation and Scientific Committees of the IWC on the issue; and support implementation of the strategic plan through engagement with scientists, industry, nongovernment organisations (NGOs), governments, and the community.

The Chair summarised the WGWW's Work Plan for 2012-14, consisting of the following actions: complete and begin to populate the web-based living handbook; identify potential outside expertise for specific actions identified in the Strategic Plan; complete and test a survey tool to assist with capacity building; participate in the 2012 Whale and Dolphin Watch Operators Conference in the United Kingdom; and hold an operator-based workshop to obtain wider industry input on population of the handbook and implementation of the Strategic Plan.

2.4 IWC's Five-Year Strategic Plan on Whalewatching

The Chair introduced the IWC's Five-Year Strategic Plan on Whalewatching (Strategic Plan). The Chair noted that the core principles of the Strategic Plan were that the IWC should play an advisory role with management responsibility remaining with national governments or their subsidiaries; recognise that local issues require local solutions; the Strategic Plan should help facilitate responsible whalewatching practices; and the Strategic Plan should be a resource for industry, governments, and stakeholders.

The key elements of the Plan are research, assessment, capacity building, development, and management. The key elements would assist countries, communities and stakeholders in building and maintaining responsible whalewatching industries supported by the IWC Guiding Principles for whalewatching. These general principles include managing the overall development of whalewatching to minimise the risk of adverse impacts; more specifically design, maintain and operate platforms to minimise the risk of adverse effects on cetaceans; and conduct whalewatching activities in such a way that the natural behaviour of the cetacean is not adversely impeded by the whalewatching activities.

The Chair described the key output of the Strategic Plan an online handbook to be placed on the IWC website. The

[1]Presented to the IWC Conservation Committee as IWC/65/CCRep02.

handbook will identify, on a regional basis, examples of demonstrated best practice within the whalewatching sector; identify and list funding/development opportunities; share information on challenges and opportunities encountered when establishing operations; list all current guidelines, regulations, legislation used globally; identify and share training programs and other education tools; and provide up-to-date biological information on species and stocks.

2.5 Workshop objectives

The Chair concluded by outlining the Workshop objective: to provide a forum for whale watch operators and industry representatives from around the globe to discuss and provide input on implementation of the Strategic Plan, such as:

(1) the IWC's role in identifying and promoting whale-watching 'best practices';
(2) recommendations for what should be included in the online handbook;
(3) actions outlined in the Strategic Plan that require further engagement; and
(4) how to integrate industry expertise into other work of the IWC.

3. DISCUSSION OF STRATEGIC PLAN OBJECTIVES 1 AND 2: RESEARCH AND ASSESSMENT (MONITORING)

3.1 Small group discussions

During this session, the Workshop participants were asked to break into small groups of 8-10 people to facilitate operator input on Objectives 1 and 2 of the Strategic Plan. Each group was facilitated by a WGWW member or IWC representative who was responsible for aiding discussion between the operators and industry members. Discussion questions were to organise dialogues (see Appendix 2), but the facilitators allowed debate on related topics if deemed relevant to Objectives 1 and 2 of the Strategic Plan.

The key points and themes raised within these small group discussions related to Objectives 1 and 2 are provided below. The bullets represent the views of one or more operators or industry representatives; they do not represent consensus of the Workshop participants.

- Information collected about whalewatching should include behavioural information and areas of impact.
- Type of operation and/or level of maturity of an operation will determine the degree of data gathering that takes place as a part of the operation.
- Whalewatching vessels can be used as research platforms with operators and participants completing standard data collections sheets.
- The IWC and whalewatching associations can actively participate in data gathering.
- There is a need for training operators to gather appropriate information.
- Photos need to be of the required standard and information should be available through a range of media.
- NGOs and Universities could be designated to coordinate research in a particular region, coordinating the involvement of operators in local research projects.
- Feedback loops are important. Data and how they are used should go back to operators so that they can see the fruits of their labour and potentially use this information to value add to their educational programs (recognising that many of the data analysis might be long term; therefore, immediate feedback is not always possible)
- There is need for a whalewatching development fund.

3.2 Plenary discussions

The key points raised in plenary discussions related to Objectives 1 and 2 are provided below. The bullets represent the views of one or more operator or industry representative; they do not represent consensus of the Workshop participants.

- The whalewatching industry is worth US$2.2 billion globally with 15 million people participating annually; therefore, whalewatching needs to have a greater emphasis on educating participants on the human impacts on marine conservation values.
- There is a need to clarify the IWC's role and/or 'rebrand' its image. For example, Workshop participants were unclear whether the IWC's focus is the conservation of whales or whaling, and what role the IWC played in whalewatching promotion and management.
- Whale watchers are too dispersed and as a consequence have no way of being heard as 'one voice'. The IWC could help identify an organisation to advocate for the whale watch industry, or help facilitate advocating for the industry.
- The IWC could play a role in influencing governments when industry receives pushback from government departments.
- The IWC needs to advocate for the full suite of issues related to whalewatching activities, not just scientific matters.
- IWC can play a role in making research findings and data available.
- The whalewatching industry would benefit by clearly understanding what whalewatching-related research scientists are conducting, which would also enable operators to practically assist where possible. While some operators reported joining in studies with university, and other, researchers; others reported that there seems to be a barrier between industry and scientists, with scientists seemingly not wanting to recognise sampling evidence gathered by operators. Some participants felt the IWC should serve as a central repository for data related to whalewatching, including hiring a person dedicated to whalewatching-related data analysis. Other Workshop members felt there is too much information for a global database and coordination would be problematic if housed at the IWC. These participants urged data storage be held at regional level, but agreed the IWC can help coordinate these efforts.
- Data collection can be undertaken by crew, passengers, volunteers and professional researchers. Passenger involvement in data collection may enhance the whalewatching experience. This data collection would be basic (e.g., what was observed, where it was observed, when it was observed) and passengers could be assisted by the crew or researcher to ensure accuracy in the information.
- Companies need to have incentives to assist with research. For instance, they should be able to differentiate themselves from other companies through some form of endorsement. This will give those operators that engage in research and contribute to improved conservation outcomes a potential commercial benefit. Having researchers on board allows the operator to develop high quality materials and where possible involve guests to provide a value-added experience. Operations that engage this way could also be successfully marketed as 'Research Tourism'.

The Chair specifically asked the group to provide input on how the IWC could assist operators to develop whalewatching

operations to preferred standards, and to identify the advantages of operators working with the IWC on these efforts. Individual operators and industry representatives suggested a series of actions that could enhance the IWC's role in whalewatching, including:

- play a role in reviewing data and feeding information back to operators;
- work with governments as an advocate for whalewatching operators;
- establish a webpage portal for frequently asked questions;
- encourage the use of social media and new technology to assist with data gathering;
- describe the benefits and incentives for operators to encourage engagement in research; and
- information on methods for measuring the impact of whalewatching on whale populations, taking into account the following factors:
  - operators seem to be an easy target for governments because they can be regulated;
  - private vessels also have an impact on whales and the commercial whale watch industry;
  - professionally conducted whalewatching has a relatively low impact on populations compared to uncontrolled recreational interactions, ship strikes and entanglement; and
  - whalewatching needs to be managed in a cycle: undertake research, use this information to educate passengers and other stakeholders and to improve conservation management, undertake more research, etc.

4. DISCUSSION OF STRATEGIC PLAN OBJECTIVES 3 AND 4: CAPACITY BUILDING AND DEVELOPMENT

4.1 Small group discussions

During this session, the Workshop participants again broke into small groups of 8-10, facilitated by a WGWW member or IWC representative, to discuss questions specific to Objectives 3 and 4 (see Appendix 2).

The key points raised within these small group discussions related to Objectives 3 and 4 are provided below. The bullets represent the views of one or more operator or industry representative; they do not represent consensus of the Workshop participants.

Capacity building

- Capacity building needs to focus on improving the understanding of all parties involved in whalewatching, including governments, industry, and local and regional communities.
- Capacity building needs to be tailored to suit local issues.
- Marketing programs should not create 'false expectations'.
- Whalewatching should be considered as a valued resource by all within the community.
- The whole region needs to be considered when building an industry. There is little point in having reliable whale population within an adjacent bay if there is only limited support services and infrastructure within the local area.
- Industry development must be based on sustainability principles and the precautionary approach.
- Safety standards and incentives for self-regulation, such as an association logo, should be considered as industry develops.

Development assistance the IWC could provide

- Facilitate access to development funds.
- Facilitate linkages between communities, governments, NGOs and businesses with a view to enhancing funding opportunities.
- Provide information on practical asset use and maintenance, such as how to convert a fishing boat to an appropriate whalewatching platform.
- Assist with establishing regional whalewatching industry groups.
- Promote and update the reports on economic benefits of whalewatching, including broader community benefits such as tourism infrastructure (e.g., hotels, shops).
- Provide information on encouraging domestic and foreign investment in the industry.
- Increase education for safe and responsible whale-watching.

The IWC's online handbook could include the following.

- Whale conservation initiatives that support the whale-watching industry (e.g. go slow zones within popular whalewatching areas, educational programs, best practices).
- Short videos demonstrating how a business can be established, including challenges that have been experienced by others.
- Information on how whalewatching can benefit local and regional communities more broadly, such as through the development of service infrastructure (e.g., fuel supplies, catering, vessel maintenance, accommodation, souvenirs) to support the industry.
- Education and interpretation guides for local schools and other education/interpretive centres.
- Examples of responsible marketing.
- Regional tourism offices and regional whalewatching associations can assist with populating the handbook.

4.2 Plenary discussions

The key points raised in plenary discussions related to Objectives 3 and 4 are provided below. The bullets represent the views of one or more operator or industry representative; they do not represent consensus of the Workshop participants.

Capacity building

- Develop and circulate a survey to assess capacity needs at the regional level through working with regional organisations.
- Hold additional Workshops for operators and industry members to build on what has already been achieved. Consider a series of Workshops that attracts different participants depending on the level of maturity of their whalewatching programs.
- Assist in establishing networks that facilitate meaningful information exchanges between industry members and government managers.

Development assistance the IWC could provide

- Utilise connections with governments to encourage industry development assistance.
- Information on how to start a whalewatching industry for regions that do not currently have whalewatching operations.
- Consider establishing buddy/partnership/mentoring programs that provide those who are developing a whale watch industry with access to advice and information from a region that is implementing a successful whale watch program.

- Facilitate whalewatching partnerships between researchers, operators, government managers and NGOs.
- Identify regional and national associations and describe the operational environments that these associations function within.
- Approach the World Bank and Global Partnership for Oceans to discuss a program of small grants to assist development of responsible whalewatching.

The IWC's online handbook could include the following.

- Information on existing best practices and guidelines.
- Lessons learnt by other whale watch programs and governments.
- Information for managing expectations through marketing.
- Regional hotspots for whalewatching.
- Listing of whalewatching associations with descriptions of the different roles they play.
- Examples of operator training programs.
- Descriptions of existing incentive schemes.
- Descriptions of outstanding operator and research organisation partnerships.

5. DISCUSSION OF STRATEGIC PLAN OBJECTIVE 5: MANAGEMENT

5.1 Small group discussions

The final small group discussion session addressed questions specific to Objective 5 (see Appendix 2). The key points raised within these small group discussions related to Objective 5 are provided below. The bullets represent the views of one or more operator or industry representative; they do not represent consensus of the Workshop participants.

- There is a need for regulation with firm compliance measures including fines and imprisonment. Not everyone is capable of self-regulation, particularly when competition becomes an issue.
- Self-regulation is important for improving local and regional standards.
- The precautionary principle should be applied until evidence-based decisions can be made.
- Advocates such as NGOs can be problematic when involved in developing operational standards relating to harassment and approach distances. Operators must be involved as they are on the water with the animals and understand whale behaviour.
- Permits are required to regulate operators and can be used to require standards of operation across the industry. This, in turn, can provide improved conservation outcomes, particularly if a requirement of a permit is to provide interpretive/education services to passengers.
- Need to place a cap on the number of permits/licenses issued to prevent speculators from impacting on established operations. Price cutting can impact operational standards and subsequently impact whale welfare.
- Permits for vessel-based whalewatching and swim-with operations should apply different conditions.
- Management is much more than applying regulations. It must be progressive, adaptive and importantly, be seen as a service provider to the industry.
- Need to manage other factors that have the potential to impact whalewatching and the whales themselves (e.g., recreation vessel impacts, entanglement).
- Relationships between the science community, government agencies and operators need to be established in the early phase of adopting a management scheme.
- Whalewatching guidelines are acceptable in the short term but need to transition into regulation or become a key component of a permit system as regional programs develop.
- Operators need to acknowledge that a primary role of management is to protect the whales.
- 'No-go' zones and other protective measures can be necessary management measures in calving grounds. Partial access rules can also be effective.
- Emphasis must be placed on education, but stronger compliance measures must be applied where education fails.
- Enforcement must be funded. As an example, a levy collected from each operator can be utilied to support compliance monitoring and other management activities.
- Education is fundamental to assisting awareness and appreciation which underpins responsible whalewatching. This must be complimentary to regulations.

5.2 Plenary discussions

The final plenary discussion session addressed Objective 5. The key points raised in the plenary discussions related to Objective 5 are provided below. The bullets represent the views of one or more operator or industry representative; they do not represent consensus of the Workshop participants.

- Management programs need to work for governments and animals, not just operators.
- Guidelines are limited as they are not compulsory.
- One approach to this issue is to bring all involved parties together before and after the whalewatching season (and during, if necessary and desired) to discuss current and emerging issues. This has proved to be very effective in certain countries.
- Existing approach distances are not based on science. Guidelines need to reviewed and adapted to the best science available.
- IWC has an extensive compendium of regulations from around the world. An assessment of the success of these regulations, and sharing this assessment with operators, would be useful.
- Swim-with operations should be regulated similar to on-vessel operations. Limited access permits and limited numbers of such permits have a positive impact.
- Governments need to adapt and update regulations as new science becomes available.
- Enforcement is very difficult and costly; therefore, self-regulation is very important.
- Management must be location-specific, based on site-specific variables.

6. SUMMARY OF WORKSHOP PARTICIPANTS' RECOMMENDATIONS FOR THE IWC

The Chair concluded the Workshop with a summary of the key recommendations identified by the Workshop participants.

- IWC should communicate to nations that its advisory role extends to issues related to whalewatching, since most people do not associate the IWC with whalewatching research and management.
- IWC should play a facilitative role by steering operators towards regional organisations that can provide financial and advisory assistance.
- IWC should consider creating a voluntary fund to be used to assist industries and operators in developing countries.
- IWC should develop templates for data collection, capacity building, and market research surveys for operator use.

- IWC's online living Handbook should include:
  - case studies, including successes and failures;
  - biological and ecological information on cetaceans;
  - lists of relevant regional organisations;
  - examples of best practices; and
  - assessment of the compendium of whalewatching regulations from around the world.
- IWC could facilitate feedback to operators and governments on:
  - research needs to fulfil management requirements
  - research results; and
  - how operators can provide input into research priorities.
- IWC should facilitate regional Workshops and networking opportunities.
- IWC should advise nations to address regional factors in any best practice management regimes, or include such factors in any best practices developed by the IWC.
- IWC should encourage countries to implement an adaptive management approach, regardless of the management method used by the nation.
- IWC should encourage nations to reference the IWC's existing collection of worldwide regulations and guidelines when developing and/or reviewing management practices for their nation.

Annex A

List of Participants

WHALE WATCH OPERATORS, INDUSTRY MEMBERS, LOCAL COMMUNITY REPRESENTATIVES

Argentina
Rafael Benegas, HydroSport

Australia
Anthony Ardern, Whales in Paradise
Will Ford, Whalewatching Sydney
Frank Future, Imagine Cruises
Stuart King, Dolphin Watch Cruises – Jervis Bay Pty Ltd
Peter Lynch, Blue Dolphin Marine Tours
Steve Mitchell, Seafari Eco-cruises
Terri Mitchell, Seafari Eco-cruises
David Paton, Blue Planet Marine
Brian Perry, Hervey Bay Whale Watch
John Rumney, Eye to Eye Marine Encounters

Costa Rica
Gerardo Palacios, Osa Conservation Area, Conservation Areas National System

Dominican Republic
Gene Flipse, Conscious Breath Adventures

Gibraltar
Rocio Espada, Dolphin Adventure/Dive Charters

Ireland
Nic Slocum, Whale Watch West Cork

Mexico
Karel Beets, Ecotours de Mexico
Astrid Frisch, Ecologia y Conservacion de Ballenas, AC; WGWW industry member

New Caledonia
Aline Schaffar, Opération Cétacés

New Zealand
Kauahi Ngapora, Whale Watch Kaikaoura Ltd

Norway
Marta Acosta, Marine Research and Education Fund of Andenes (MAREFA)/Whalesafari

Palau
Fiafia Rex, Palau

Panama
Anne Gordon De Barrigon, Whalewatching Panama

Spain
Andre Anciaes, Turmares Tarifa - Whalewatching Company

Sri Lanka
Deepika Kumari, Mirissa Water Sports (PVT) Ltd

St. Vincent and The Grenadines
Gaston Bess, St Vincent and The Grenadines community
Orson Olivierre, St Vincent and The Grenadines community

Tonga
Allan Bowe, Whale Watch Vava'u
Ma'ata Fifita, Whale Watch Vava'u
Samuel Tatafu, Deep Blue Cruises

USA
Casey Cohan, Pacific Whale Foundation
Doug Ewalt, Hawaii Nautical
Greg Kaufman, Pacific Whale Foundation
Cynde McInnis, Cape Ann Whale Watch
Steve Miliken, Dolphin Fleet Whalewatch

UK
Ian Rowlands, Planet Whale

IWC STAFF, WGWW MEMBERS, GOVERNMENT AND INTERGOVERNMENTAL ORGANISATIONS MEMBERS

Argentina
Miguel Iñíguez, Foreign Affairs Ministry of Argentina; WGWW member

Australia
Fiona Bartlett, DSEWPaC
Mike Double, Australian Antarctic Division
Michelle Evans, DSEWPaC
Kathy Hermosilla-Silva, Chilean Consulate - Brisbane
Artie Jacobson, DSEWPaC
Peter Komidar, DSEWPaC
Sylvana Maas, DSEWPaC
Sarah McCormack, DSEWPaC
Bec Onken, DSEWPaC
Donna Petrachenko, DSEWPaC; IWC Commissioner for Australia
Geoff Richardson, DSEWPaC
Chris Schweizer, DSEWPaC; WGWW member
Tristan Skinner, DSEWPaC

Brazil
Fabia Luna, IWC Scientific Committee; WGWW member

Fiji
Saras Sharma-Goundar, Ministry of Fisheries, Fiji

Mexico
Lorenzo Rojas-Bracho, National Institute of Ecology and Climate Change; IWC Commissioner for Mexico; WGWW member

New Zealand
Louise Chilvers, Department of Conservation, New Zealand

Russian Federation
Valentin Ilyashenko, Institute of Ecology and Evolution Russian Academy of Science; IWC Commissioner for the Russian Federation
Elena Ilyashenko, Institute of Ecology and Evolution Russian Academy of Science

Samoa
Catherine Siota-Manu, Secretariat of the Pacific Regional Environment Programme (SPREP)
Penina Solomona, Secretariat of the Pacific Regional Environment Programme (SPREP)

St. Vincent and The Grenadines
Kari Da Silva, Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry, St. Vincent and The Grenadines

UK
James Gray, Department for the Environment Food and Rural Affairs (DEFRA); WGWW member

USA
Melissa Andersen Garcia, US National Oceanic and Atmospheric Administration (NOAA); WGWW member
Carole Carlson, IWC Scientific Committee and WWWG member
Ryan Wulff, US National Oceanic and Atmospheric Administration (NOAA); Acting IWC Commissioner for USA; WGWW Chair

IWC Secretariat
Simon Brockington
Greg Donovan

NON-GOVERNMENTAL ENVIRONMENTAL ORGANISATIONS REPRESENTATIVES

Australia
Olive Andrews, Whales Alive

USA
Naomi Rose, Humane Society International; IWC Scientific Committee

Annex B

Agenda

DAY 1

Welcome and introduction
09:00-09:15
Welcome (Donna Petrachenko, IWC Commissioner from Australia); welcome video message from Australia's Minister for Sustainability, Environment, Water, Population and Communities, the Hon Tony Burke MP.

Whalewatching at the IWC
09:15-09:45
Whalewatching and the IWC (Simon Brockington, IWC Executive Secretary and/or Greg Donovan, IWC Head of Science): *History of the WWGW, whalewatching-related work under the IWC (SC and Commission).*

9:45-10:15
Need for Workshop, Introduction of the IWC's Five-year Strategic Plan on Whalewatching and IWC Working Group on Whalewatching – WGWW (Ryan Wulff, Chair of the WGWW): *How it was developed; what the Plan includes/ covers; work plan of WGWW and goals of the Workshop.*

10:15-10:45
Question and answer session.

10:45-11:15: Coffee break.

Operator input on the implementation of the Five-Year Strategic Plan for Whalewatching
11:15-11:30
Introduce Objective 1 of the Strategic Plan: Onboard Science (Ryan Wulff and/or WGWW member).

STRATEGIC PLAN OBJECTIVE 1
The necessary principles and tools are developed to assist in ensuring that whalewatching does not significantly adversely impact on the behaviours and fitness of individual cetaceans or populations, or on their habitats.

11:30-12:30
Small Group discussion: operator input on Objective 1 of the Strategic Plan: *break in to small groups of 10+ people. WGWW members to facilitate small group discussions. [Potential] Questions for discussion:*

(1) how can we increase whale watch operators as data-gathering platforms?
(2) how should operators be included in whalewatching research?
(3) how can we improve industry and public access to data?

12:30-13:45: Lunch.

13:45-14:00
Introduce Objective 2 of the Strategic Plan: Assessment (Monitoring) (Ryan Wulff and/or WGWW member).

STRATEGIC PLAN OBJECTIVE 2
Appropriately scaled monitoring programs will be developed that maximise the chance of detecting potential adverse impacts on individual cetaceans and on populations.

14:00-15:00
Small Group discussion: operator input on Objective 2 of the Strategic Plan. *Break in to small groups of 10+ people. WGWW members to facilitate small group discussions. [Potential] Questions for discussion:*

(1) how should operators be included in whalewatching monitoring?
(2) how can the IWC WGWW facilitate the development of common metrics for impact assessments?
(3) how can we improve industry and public access to data?

15:00-16:00
Plenary discussion on Objectives 1 and 2: reports from the small groups, discussion and recommendations.

16:00: Welcoming Event: 'Networking and Nibbles'
Who: IWC Whale Watch Workshop delegates and Australia's Cetacean NGOs.
Where: Arbour Level Reception Foyer Brisbane Convention and Exhibition Centre. Arbour Level Map - *http://bcec.com.au/index.php/rooms-spaces/arbour-level.*
Dress code: smart casual/informal business attire.

DAY 2

Welcome and reconvene
08:30-08:45
Recap of Day 1 and plan for Day 2 (Ryan Wulff, Chair of the WGWW). *The plan for day two is to continue obtaining operator input on the implementation of the Five-Year Strategic Plan*

Operator input on the implementation of the Five-Year Strategic Plan for Whalewatching (continued)
08:45-09:00
Introduce Objective 3 of the Strategic Plan: Capacity Building (Ryan Wulff and/or WGWW member).

STRATEGIC PLAN OBJECTIVE 3
Identify methods to facilitate cooperation and information/ expertise sharing between Contracting Parties and others to support the development of a responsible whalewatching sector and the provision of benefits to local communities. Within two years of commencing work on actions to support this objective, undertake a comprehensive review of outputs to allow for activities to be refocused, if required.

09:00-10:00
Small Group discussion: operator input on Objective 3 of the Strategic Plan. *Break in to small groups of 10+ people. WGWW members to facilitate small group discussions. [Potential] Questions for discussion:*

(1) would an online or paper survey be the best means for the IWC to identify capacity building needs in your region?
(2) what are capacity building needs in your region? How can the IWC identify capacity building needs in regions not represented at this Workshop?
(3) how can the IWC facilitate the transfer and/or development of best practices to meet capacity building needs?

(4) what are some mechanisms the IWC WGWW can use to disseminate products developed under the strategic plan?
(5) how would you encourage community participation and ownership of the whalewatching industry?
(6) other questions or topics raised by participants.

10:00-10:30
Plenary discussion on Objective 3: reports from the small groups, discussion and recommendations.

10:30-11:00: Coffee break.

11:00-11:15
Introduce Objective 4 of the Strategic Plan: Developing and/or Enhancing a Responsible Whale Watch Operation (Ryan Wulff and/or WGWW member).

STRATEGIC PLAN OBJECTIVE 4
Recognising that the responsibility for economic, business and social development lies with industry and national governments, facilitate access to funding and development organisations and to information on economic and social cost/benefit analyses required to support the establishment of whalewatching operations.

11:15-12:15
Small Group discussion: operator input on Objective 4 of the Strategic Plan. *Break in to small groups of 10+ people. WGWW members to facilitate small group discussions. [Potential] Questions for discussion:*

(1) what recommendations do you have for responsible marketing of the whale watch industry in your region and/or globally?
(2) do you have any suggestions for organisations that may be able to offer whalewatching development assistance in your region?
(3) what advice do you have for the development of a 'community of practice' in your community, one which can help operators share information on challenges and opportunities in the region?
(4) what guidance or tools would you include to address occupational health and safety of whalewatching operations?
(5) other ques tions or topics raised by participants.

12:15-12:45
Plenary discussion on Objective 4. Reports from the small groups, discussion and recommendations.

12:45-14:00: Lunch.

14:00-14:15
Introduce Objective 5 of the Strategic Plan: Management Aspects (Ryan Wulff and/or WGWW member).

STRATEGIC PLAN OBJECTIVE 5
Develop an adaptive management framework for whale-watching, based on best available science, which addresses the needs of management and the industry.

14:15-15:15
Small Group discussion: operator input on Objective 5 of the Strategic Plan. *Break in to small groups of 10+ people. WGWW members to facilitate small group discussions. [Potential] Questions for discussion:*

(1) of the various types of management methods used internationally, which do you think have worked or could work in your region? What has not worked?
   (a) licensing or permitting schemes to regulate the number, type and size of vessels?
   (b) measures to regulate approaches, frequency, length and type of exposure in encounters with wildlife?
   (c) closed seasons, 'no go' areas, and 'no approach times'?
   (d) guidelines in place of regulations?
   (e) enforcement framework to ensure compliance with management provisions?
(2) how would you develop and implement training and education tools for operators and their staff?
(3) what methods do you think would work to monitor the effectiveness of management provisions and modify them, as needed, to reflect new information and circumstances?
(4) other questions or topics raised by participants.

15:15-15:45
Plenary discussion on Objective 5. Reports from the small groups, discussion and recommendations.

15:45-16:15: Coffee break.

Workshop summary, recommendations and next steps
16:15-16:45
Workshop summary and next steps (Ryan Wulff, Chair of WGWW). *Recap of the Workshop and any recommendations, plan for developing products and implementing actions related to the Five-Year Plan.*

16:45-17:15
Final thoughts from operators and discussion.

17:15-17:30
Closing remarks and details on tomorrow's optional field training/whale watch tour (Ryan Wulff, Chair of WGWW).

17:30: Adjourn.

Report of the IWC Workshop on Euthanasia Protocols to Optimise Welfare Concerns for Stranded Cetaceans

11-13 September 2013, London, UK

Report of the IWC Workshop on Euthanasia Protocols to Optimise Welfare Concerns for Stranded Cetaceans[1]

RECOMMENDATIONS OF THE REPORT

The Workshop stresses that human safety should always be considered paramount.

The Workshop recommends that humaneness should be the first criteria for any euthanasia method, rather than concerns over aesthetics or public acceptance, although also important in the bigger picture when managing euthanasia. A humane death will often involve the very shortest time to death, but not always if pre-sedation is undertaken to provide anxiolysis and analgesia (American Veterinary Medical Association, 2013). Other criteria for the chosen method of euthanasia include availability of equipment and drugs, existing knowledge/expertise, and relevant legal/regulatory framework (including cultural, political, aboriginal, socio-economic differences between countries).

- The Workshop **recommends** several chemical and physical techniques for euthanasia of large beached whales, including chemical sedation followed by potassium chloride (KCl) intra-cardiac injection for baleen whales (Harms *et al.*, 2014) and high calibre ballistics and explosives (cranial implosion technique) (Coughran *et al.*, 2012) for baleen and sperm whales.
- The Workshop **strongly recommends** that euthanasia of cetaceans should not be conducted by untrained personnel, as this may endanger humans and increase the suffering of the animals.
- The Workshop **recommends** that in order to ensure the safety of response personnel, attempts at euthanasia of beached whales should not be conducted when a whale is in surf and should be conducted only when a whale has been stabilised or is above the tide line.
- The Workshop **recommends** that all euthanasia methods should be **tested on dead animals** first, to develop methodological expertise and obtain correct anatomical knowledge (e.g. via necropsies on strandings).
- The Workshop **recommends** that for chemical methods, removal of the injection site to limit risk of disposal and potential for relay toxicity is a minimum requirement. Where barbiturates have been used, the entire carcass should be disposed of where scavengers cannot access it.
- The Workshop **recommends** that IWC member nations refine existing or develop new incident response protocols based on the principles and guidelines found in this report.
- The Workshop **recommends**, for each event, the collection of appropriate data, full documentation of the event and the sharing of experiences/data to refine decisions and situation handling in the future. This process should include information on both successes and failures; the latter can be extremely informative in developing improvements and preventing mistakes being repeated.
- The Workshop **recommends** the addition of a number of 'outcome' fields to the existing IWC National Progress report database for live strandings: released/rescued; euthanised (method categories as in Table 3); no intervention.
- The Workshop noted the value of establishing a voluntary group of experts (contact list) that can be consulted by the IWC and others to: (1) provide advice on euthanasia protocols and methods to relevant authorities; (2) provide objective information to the media if requested; and (3) assist the IWC Secretariat in populating the IWC website. The Workshop **recommends** that this list be maintained by the IWC Secretariat.
- The Workshop noted the great potential of the IWC to facilitate work on live strandings and euthanasia techniques, similar to the approach developed for disentanglement (IWC, 2013). It therefore **recommends** the establishment of a live stranding response component of the IWC website with a layered capacity. It also **encourages** IWC countries to facilitate the exchange of information, expertise, technology and training.
- With respect to data gaps, the Workshop **agrees** that more work is needed on the environmental persistence and potential effects of some chemical methods and **encourages** this research and provision of information. The Workshop **notes** the importance of composting as a safe and environmentally positive means of disposal of cetacean carcases and it **encourages** national and local authorities to facilitate this method of disposal where appropriate.
- The Workshop recognised the effectiveness of penthrite grenades and **encourages** the development of a darting-gun type delivery system that it is suitable for beached animals and may also be appropriate for entangled whales at sea. It **requests** that a progress report on this topic is provided to the 2014 Meeting of the IWC.
- Related to this, the Workshop **endorses** a previous Workshop recommendation (IWC, 2012) concerning the need to develop methods for euthanasia of cetaceans at sea (entangled or otherwise requiring human intervention). It **agrees** that this may be facilitated by the holding of a future technical Workshop and **requests** that this be considered further at the 2014 Annual Meeting.
- At several places in this report, the Workshop highlighted difficulties with mass stranding events. It therefore **recommends** that the IWC consider holding or facilitating the holding of a future Workshop on mass stranding events, including management, social, welfare and euthanasia considerations.

[1]Presented to the IWC Sub-Committee on Whale Killing Methods and Other Associated Welfare Issues as IWC/65/WKM&AWIRep01.

1. INTRODUCTORY ITEMS

The meeting was held at the Institute of Zoology (Zoological Society of London), Regent's Park, London NW1 4RY, UK from 11-13 September 2013. The list of participants is given as Annex A.

1.1 Welcoming remarks

Paul Jepson (Institute of Zoology) welcomed the participants to the Workshop on behalf of the Convenors, the UK and Norway.

1.2 Background

Deaville presented an overview of euthanasia and live strandings in the UK, highlighting that this is an emerging issue for the UK and other countries. The UK has a well-developed volunteer-led network that responds to live strandings and is currently able to euthanise small to medium sized cetaceans relatively routinely. However, there are no current means of effective euthanasia for large stranded whales and the UK has also seen an increasing number of large cetacean live strandings in recent years.

Coughran commented that the recovery in the humpback whale population off Western Australia and their seasonal migration has led to an increased likelihood of these animals coming ashore due to natural and human induced causes (Bannister *et al.*, 1996). There has been an increase in humpback whale strandings in Western Australia with multiple live and dead animals washing ashore in populated areas.

The Workshop **recognised** that the issue of how to deal with large stranded whales is a common problem for many coastal states. A key objective of the Workshop will be to provide practical advice on how to deal with such occurrences in a local context.

2. APPOINTMENT OF CHAIR AND RAPPORTEURS

2.1 Appointment of Chair

Paul Jepson (UK) was appointed Chair.

2.2 Appointment of rapporteurs

Deaville, Gray and Rundall were appointed rapporteurs, assisted by Donovan and Jepson.

3. REVIEW AND ADOPT AGENDA

The adopted Agenda is given as Annex B.

4. REVIEW OF AVAILABLE DOCUMENTS

Barco *et al.* (2012); Coughran *et al.* (2012); Harms *et al.* (2014) and Moore (2010) were reviewed at the Workshop.

5. OBJECTIVES FOR THE WORKSHOP

The aim of the Workshop is to bring together international experts to inform guidelines on the best welfare outcome when cetaceans strand. In the light of lessons learned from the IWC's work on entanglement and entanglement response, the Workshop will compare and contrast the various euthanasia methods used worldwide and look at ways of improving efficiency, safety of personnel and when or if to intervene (including, potentially, a decision tree and reviewing triage techniques). It will make recommendations as appropriate.

Specific objectives are to:

- improve the evidence base for future assessments of when and how to euthanise stranded cetaceans to optimise animal welfare, using the most effective technologies available and taking into account different circumstances (e.g. economic, logistical and available expertise);
- identify how to improve the efficiency and quality of information/data generated by large whale stranding events, including lessons that can be learned from them;
- focus on biological considerations and technological measurements taking into account the decisions that need to be considered such as health and safety, logistics, physical (both location and species), triage at Mass Stranding Events (MSEs), and existing protocols/guidelines;
- generate a list of techniques (established protocols) for each method of euthanasia (chemical, ballistics, explosives, etc.); and
- provide advice on how to manage different situations in the context of the media and the general public.

6. CURRENT RAPID KILLING AND EUTHANASIA TECHNIQUES (BEACHED CETACEANS)

6.1 Review relevant information from IWC - Maui Workshop

The Workshop reviewed the relevant aspects of the 2010 IWC Workshop on the Welfare Issues Associated with the Entanglement of Large Whales, held in Hawaii (IWC, 2012). That Workshop had agreed that most stranded baleen whales are in a terminal condition and that under most circumstances (and always in areas of surf), it is both inhumane to the whale and dangerous to response personnel to attempt to refloat and release a stranded large whale. If the whale does not refloat on its own after one tidal cycle, euthanasia should be considered as the most humane option. The Workshop had also **recommended** that in order to ensure the safety of response personnel, attempts at euthanasia should not be conducted when a whale is in surf and should be conducted only when a whale has been stabilised or is above the tide line.

The present Workshop reviewed the matrices of relevant existing methods for euthanising large whales at sea or stranded on the beach developed at the Hawaii Workshop (IWC, 2012, table 6). It noted that several methods for euthanising stranded large whales had been developed or improved since then, but there had been no significant advancements for methods to euthanise at sea. These matters are discussed further below.

6.2 Definition of euthanasia

A new definition of euthanasia was adopted by the American Veterinary Medical Association in 2013: The use of humane techniques to induce the most rapid and painless and distress-free death possible (American Veterinary Medical Association, 2013). The Workshop **agreed** to this definition.

6.3 Chemical euthanasia

When considering chemical euthanasia, it must be remembered that the size of the animal also necessitates large quantities of euthanasia agents.

6.3.1 Sedatives

A comprehensive list of sedative chemical agents (drugs) used as part of euthanasia protocols was compiled during the Workshop (Table 1). This included a summary of the drug's effects, doses, routes of administration, cetacean

species for which they have been used (with references) and an assessment of risks for human individuals and the environment, including risk of 'relay toxicity' (see Item 6.3.5 and Table 1). Sedatives are generally used to sedate an animal prior to physical and chemical methods of euthanasia including exsanguination (Table 3).

6.3.2 Lethal chemicals

A comprehensive list of lethal chemical agents used as part of euthanasia protocols was also compiled during the Workshop (Table 1). This included a summary of the drug's effects, doses, routes of administration, cetacean species used (with references) and an assessment of risks for human individuals and environmental risks including relay toxicity (see Item 6.3.5).

6.3.3 Injection techniques/equipment

The safe euthanasia of live stranded cetaceans is one of the most challenging tasks in all marine mammal stranding events. The experiences of the Virginia Aquarium Stranding Response Program and other colleagues in the US Marine Mammal Stranding Network, as well as the general lack of information and guidance publicly available, inspired a two-year collaborative John H. Prescott grant project in the USA (Barco *et al.*, 2012).

Harms presented the results of this project to the Workshop. The project developed recommendations for US stranding networks to facilitate the euthanasia of stranded cetaceans when release or rehabilitation is not an option. It developed standardised methods of data collection for cetacean euthanasia events, collected pertinent historic data from stranding networks nationwide, and compiled a review of grey and peer reviewed published euthanasia literature. Informational materials were also developed on general and safety recommendations for stranded cetacean euthanasia, euthanasia options matrices for large and small cetaceans, a summary of effective euthanasia methods species-specific length-weight equations and graphs, species-specific observations for stranded cetacean euthanasia, common needle lengths and routes, aggregate historic drug doses and pentobarbital dosages for commonly encountered species, small cetacean illustrations for ballistics, injection and exsanguinations, and cetacean euthanasia record and instructions for standardised recording of euthanasia events. These materials are included in an appendix to the paper as a stand-alone document to aid responders during cetacean euthanasia events.

Many of the recommendations for use of specific drugs for sedation or euthanasia within this report (Table 1) were sourced from Barco *et al.* (2012). The Workshop also noted the need to **correct** an error in the literature review in Barco *et al.* (2012) in relation to the Greenland rifle whale hunt with a long time-to-death (TTD) being confused with the Norwegian minke whale hunt using penthrite grenades where TTDs were mostly very short/instantaneous.

The Workshop **highly commended** the extensive and thorough review of euthanasia methods, drugs, dosages and risks associated with chemical and other methods of euthanasia compiled in the Barco *et al.* (2012) report.

Harms also presented chemical sedation followed by lethal intracardiac injection of potassium chloride (KCl method) using a purpose-built long (up to 103cm) industrial needle (Harms *et al.*, 2014). This technique was used successfully in four baleen whale cases (see Item 6.3.4). The Workshop **agreed** that KCl without prior sedation was unacceptable for routine euthanasia due to welfare issues related to the high potential for severe pain and distress. The Workshop was divided on whether KCl without prior sedation might be considered as a method for euthanasia *in extremis*.

There is variation between countries and methods in terms of costs for chemical euthanasia. For example, the sedatives in the KCl method alone are significantly more expensive in the UK than in the USA, partly because the actual drug concentration for one of the commercially available sedatives is quite different between USA and the UK. This means that effectively there is a need to buy more of the drug (by volume) in the UK to make the correct 'dose', and this adds significantly to the cost in the UK. Some drugs are just not available in some countries. For this reason, costs were not included for each chemical euthanasia technique listed in Table 1. However, some example costs were presented and discussed including US$1,000 for the long, industrial-grade steel intra-cardiac needle and US$500 for the three sedatives (Midazolam, Acepromazine and Xylazine) with each whale using the KCl with chemical sedation in the US (Harms *et al.*, 2014). A southern right whale in Brazil euthanised with a combination of xylazine (2%), ketamine (10%), T-61 and KCl was estimated to cost US$5,295 (Kolesnikovas *et al.*, 2012).

6.3.4 Examples of euthanasia using chemical agents

Throughout the Workshop, a number of case studies involving the euthanasia of stranded cetaceans was presented and discussed. These cases not only focussed on methods and techniques for euthanasia that were deemed successful, but also included cases where, for one reason or another, the outcomes were suboptimal but from which important lessons could be learnt.

To set the scene, Moore presented the case of a difficult live stranded humpback whale from 2010. Over a four day period, a live male humpback was managed on a high surf beach. Length was estimated in the surf at 6.5m. On this basis, the following approach resulted. In order to tranquilise the animal and gain access to the tail to tow it out of the surf, a mixture of sedative was administered by remote intramuscular injection on the third day. Deep sedation resulted, but the loss of a loaded dart in the surf halted operations. The animal appeared apnoeic but on the following morning weak respirations were observed. Using a .577 rifle, three round-nose rounds were dispatched, using the New Zealand DOC guidelines for landmarks to target the brainstem. The animal remained alive. Euthanasia solution was then administered into the ventral abdomen and the retrobulbar plexus. The last respiration was noted 45 minutes later. At necropsy, the animal was measured at 9.4m. Ballistic damage was found to have sheared away from the braincase, despite accurate targeting. The carcass was buried in a landfill. Three weeks later a dog consumed a small portion of the carcass that had been lost in the sand at the necropsy site and entered into a coma before recovering several days later (Bischoff *et al.*, 2011). Lessons learnt from this case included:

(1) length must be accurately measured with a tape at the outset – in-surf estimation is inadequate and often leads to serious underestimation of length and hence is unsuitable as a basis for management decisions;
(2) heavy sedation of a robust whale is not necessarily lethal;
(3) shooting a 9.3m humpback whale with .577 soft nosed bullets is inappropriate (see Item 6.4.1);
(4) remote delivery of drugs carries a significant risk of dart loss with resultant potential human health risks;

Table 1

Drugs for potential use in large whale euthanasia. Note the volumes of drugs used make them all a potential human health concern.

	Effect						Concerns		
Drug	Sedative/ hypnotic	Analgesic	Muscle relaxation	Cardiac arrest	Usage, approx. dosage	Species used on (reference)	Human hazards	Ecotoxicity/relay toxicity	Comments
Potassium chloride (KCl)	No	No	No	High	Intracardiac (IC) or intra-venous (IV) ideal, intra-peritoneal (IP) works, AFTER sedation/analgesia (1-2 mmol/kg).	Fin, humpback, minke, southern right whale (Daoust and Ortenburger, 2001; Harms *et al.*, 2014; Barco *et al.*, 2012; Kolesnikovas *et al.,* 2012)	None	None	Cheap, readily available, sold as water softener (use heat to dissolve fully).
Pentobarbital and pentobarbital/phenytoin combinations	High	High at anesthetic dose	Medium	High	IV, IC, IP, in blow hole (in Dunn, 2006), may follow sedation with a range of drugs to enable IV, IP access 60-200mg/kg.	Humpback, gray, southern right, fin (Barco *et al.*, 2012; Greer *et al.*, 2001)	Low, although toxic if IV or ingested	High. (Eckel *et al.*, 1993; Peschka *et al.*, 2006; Bischoff *et al.*, 2011). Composting destroys (Schwartz *et al.*, 2013)	Terminal convulsions may occur without previous sedation; these have been controlled with muscle paralytics in land mammals.
Diazepam	High (<Mida-zolam)	No	High (>Mida-zolam)	Low	Sedation to allow IV access. Intramuscular (IM) or IV, 0.2mg/kg.	Barco *et al.* (2012)	Low	Low	Most effective IV. Readily available in most veterinary clinics.
Midazolam	High	No	High	Low	Sedation prior to barbiturate, IM, IV; Good premedication. 0.2-1mg/kg.	Barco *et al.* (2012)	Low	Low	More effective than Diazepam IM. Effective amnesiac.
Acepro-mazine	High	Low	Medium	Low	Sedation prior to barbiturate, 1mg/kg.	Barco *et al.* (2012)	Low	Low	Readily available in most veterinary clinics.
Detomidine	High	Medium	Medium	Low	Sedation prior to barbiturate, 0.2g/kg.	Barco *et al.* (2012)	Low	Low	Expensive, rarely available if not a zoo/ aquarium. No human reversal agent available.
Medeto-midine or dexmed-etomidine	High	Medium	Medium	Low	Sedation prior to barbiturate, 0.2mg/kg (half dose with dexmedetomidine.	Barco *et al.* (2012)	Low	Low	Readily available in most veterinary clinics in USA. No human reversal agent available.
Xylazine	High	Medium	Medium	Low	Sedation prior to barbiturate IV. IM or IV 0.5-1mg/kg, repeat as needed.	Gray, fin, southern right whales (Daoust and Ortenburger, 2001; Kolesnikovas *et al.*, 2012)	Low	Low	Readily available in most veterinary clinics. Excitability reported but could be behavioural rather than reflex (Greer *et al.*, 2001).
Meperidine	Medium	Good	Low	Low	Sedation prior to IV drug usage IM 3mg/kg.		Low	Low	Not available in some countries.
Etorphine	High	Medium	Low	High	IM without previous sedation, 0.5 ml 'LA Immobilon' ® per 1.5 m of cetacean.	Greenwood and Taylor (1980); RSPCA (1997); Barnett *et al.* (1999)	High	High	Not readily available in some countries; requires special license/permits – controlled substance.
Carfentanil	High	Medium	Low	High	-	-	High	High	Not reported as euthanasia agent for cetaceans, but effective anesthetic in walrus, likely to be effective; expensive; controlled substance.
Pancuronium, Succinyl-choline	No	No	Paralysis	Second-ary to paralysis	IV following anesthesia.	-	Medium	Low	Used in land mammals following anesthesia in combination with pento-barbital to minimise muscle movements.
Ketamine	High	Low to medium	Low	Medium	IM 3mg/kg.	Barco *et al.* (2012)	Low	Low	Cheap, readily available in most veterinary clinics; controlled substance in some countries.
Telazol (Tiletamine HCl and Zolazepam HCl)	High	Low to medium	Low	Medium	IM 5mg/kg.	Barco *et al.* (2012)	Low	Low	Used in captive small cetaceans prior to IV pentobarbital.
Isoflurane	High	Medium	Medium	Medium	Inhalant.	Barco *et al.* (2012)	Medium	Low	Might be useful IC, difficult to deliver eff-ectively as inhalant with large volume needed.
T-61 (embutramide with narcotic action mebezonium paralytic)	Medium	Medium	Medium	High	0.5mg/kg xylazine (IM); 2.47mg/kg ketamine (IM); 750mL of T-61® (IC); 10,000mL of a 1mmol KCl solution (IC).	Dunn (2006); Daoust and Ortenburger (2001); Kolesnikovas *et al.* (2012)	Medium	Medium	Paralysis may occur prior to loss of consciousness; pre-euthanasia sedation recommended.

[1]'Relay toxicity' is the risk of toxicity to scavenging domestic animals or wildlife from drug residues that remain within a cetacean carcass that has been chemically sedated or euthanised.

(5) pentobarbital euthanasia carries a significant relay toxicity risk - injection sites should be carefully marked and excised for careful suitable disposal and carcasses must be disposed of appropriately; and
(6) hindsight suggests that this case could perhaps have been best managed by education of the general public about the potential human safety risks that management of this case in surf represented, and that perhaps the animal should have been simply observed until pentobarbital or sedation/KCl could have been administered safely.

A number of additional difficult euthanasia cases were presented and discussed by a number of attendees from a wide range of countries and oceanic regions. For these cases often the outcome was suboptimal and the time to death was often prolonged. Many of these difficult cases had features in common:

(1) marked underestimation of actual body length for whales located in the surf;
(2) inadequate provision of chemical agents or physical methods (often due to underestimation of body length);
(3) animals being partially suspended in some seawater (e.g. harbour or lagoon) so that the whale was not totally stranded under its own body weight (being partially submerged means that death due to stranding might be markedly prolonged compared to a large whale being stranded and subjected to its full body weight);
(4) a degree of progression where a range of (often inadequate) euthanasia methods were tried but the time to death was prolonged; and
(5) unrealistic expectations from the media putting intense pressure on stranding responders to rescue cetaceans where rescue was not a viable option.

The Workshop **agreed** that important lessons should be learnt from these difficult cases. It is precisely these cases more than any others that provide the most powerful incentives for new and improved techniques to be developed.

For example, in response to some of these difficult cases, a new euthanasia technique for stranded mysticetes using readily available, relatively inexpensive, pre-anaesthetic and anaesthetic drugs (midazolam, acepromazine, xylazine) followed by saturated KCl delivered via custom-made needles and a low cost basic pressurised canister has been used in three juvenile humpback whales and a minke whale calf (Harms *et al.*, 2014). The new KCl method provided effective euthanasia in all four cases, while moderating personnel exposure to hazardous situations and minimising drug residues of concern for relay toxicity.

The Workshop **commended** the work that had been done in the USA to develop and successfully implement this new KCl delivery technique. It also **recognised** the potential for this technique to be developed in other countries outside the USA.

Jepson presented information on four live stranded UK northern bottlenose whales of which two were euthanised with etorphine according to the UK guidelines (Barnett *et al.*, 2013). One of the non-euthanised cases appeared to convulse and then 'die' but came 'back to life' approximately one hour later, indicating that deep-diving cetacean species can mimic a dive-reflex and exhibit a prolonged period of apnoea while stranded and this can be mistaken for death.

6.3.5 Safety

All techniques for sedation and euthanasia of stranded cetaceans come with associated risk. Risks include harm to human individual(s), risks to the general public and risks to the environment. Part of the risk of using chemical agents in stranded cetaceans includes the risk of relay toxicity (Bischoff *et al.*, 2011). Pentobarbital is also an environmental concern because of its stability and long persistence in aquatic environments, as was the case with the humpback whale from 2010 that was presented by Moore (see Item 6.3.4). The various risks (human, domestic animal/wildlife and environmental) of the different chemical agents used for cetacean sedation or euthanasia are listed in Table 1.

6.4 Physical euthanasia

6.4.1 Ballistics (and see Item 6.5.3)

A list of current physical euthanasia protocols for larger whales using ballistics was compiled. This included a summary of the method, timing, effects, species used (with references) and an assessment of capital and consumable costs and an assessment of the risks for human operators and wider environment concerns (Table 2). Protocols for testing the ballistics properties of any particular firearm-projectile pairing have been well described (Thali *et al.*, 2002).

6.4.1.1 TYPES AND CALIBRE OF RIFLES

Meyer presented information on euthanasia using ballistics for South Africa, noting that use of ballistics is probably the most appropriate technique for cetaceans less than around 8m in his country; the South African Stranding Response Plan suggests that ballistics are only recommended for cetaceans ≤8.0m. He put forward a number of suggestions with respect to suitable calibre rifles and bullet grains based on the size range of smaller cetacean species that strand along the South African coastline. While there may be considerable overlap of appropriate small calibre rifles in smaller species, he suggested that the euthanasia of dolphins was best suited to .22 Hornet 45 grain soft tipped bullets. Larger dolphins and medium sized toothed whales such as pygmy sperm whales, pygmy killer and Risso's dolphin require .303 British 174 grain, soft tip ammunition. Pilot whales, false-killer whales, killer whales and beaked whales require .300 Win Mag 180 grain, soft or solid tipped hunting rounds. Neonate baleen whales (humpback and right whales) are euthanised using .300 Win Mag, 180 grain to .30-06 Springfield calibre weapons and 180 grain solid tipped hunting rounds.

However, he also noted that there had been cases where humpback whales as large as 12.3m were successfully euthanised by ballistics in South Africa. Criteria such as sectional density (SD) muzzle energy (ME), momentum value (MV) and knockout (KO) values submitted by C. Snyman (pers. comm.), a big game hunter, had been compared to specific makes and calibre rifles between .375 to .577 and recommendations were made in the South African guidelines in order of priority for both right and humpback whales. It was suggested that with euthanasia of the larger whales, ballistics should be confined to 300–500 grain, round-headed, full metal jacket bullets, In the case of right whales where a .577 calibre rifle was not available he recommended the use of the .460 Weatherby using a 500 grain round headed full metal jacket rounds (firing twice repeatedly into the same hole). As noted earlier in this report, in many cases reported whales in the water and on the beach tended to be larger than estimated sizes, resulting in procedures and processes that may not have been attempted if initially correctly measured. It should be emphasised that whales should only be euthanised if the marksman has a thorough knowledge of skull morphology (which differs by species) or if the marksman is being supervised by a person who has gained that knowledge during necropsies.

Coughran presented information on a safe, consistent and efficient method of euthanasia for cetaceans <6m in

Western Australia using firearms and ammunition that are readily available. To date, they have not encountered a species that has required the use of the larger than .458 calibre. He noted weapons larger than .458 calibre are not common and may, by virtue of limited availability within existing agency arsenals, be therefore unworkable. A key issue is to be able to demonstrate the effectiveness of a commonly available firearm-ammunition combination on a wide range of species and size range of animals. The more recently developed hydrostatically stabilised projectiles consistently achieved successful results for euthanasia over the older round-nosed and full metal jacket projectiles. Such bullets create cavitation and push the core into the target with a very stable trajectory and impact. He reported that of the nine cases examined to date, consistent results were obtained from the pairing of .300 and .308 calibre with hydrostatically stabilised projectiles.

Campbell presented information on the sperm whale euthanasia device (SWED). The SWED is a modified Russian WWII 14.5mm anti-tank weapon used for sperm whale euthanasia in New Zealand where it has been successfully used on multiple occasions. The standard operating procedure involves the SWED being hand-held and normally fires three rounds concurrently into the sperm whale. The projectiles do not go through the animal and the SWED uses a single shot rather than a magazine - all safety features. The SWED is fired very close to the animal (i.e. a couple of metres away). The SWED is specifically used for sperm whales and is not recommended for baleen whales. Costs of the SWED are estimated at 10 NZD a round and approximately 2,000 NZD for the weapon (via Russia). The shock wave of the bullets impact is thought to be sufficient to kill the sperm whale.

Grogan presented on the role of the RSPCA for cetacean euthanasia in the UK. The RSPCA is a voluntary organisation with approximately 500 officers around the UK. They carry a variety of equipment for euthanasia of animal species (captive bolt, shotgun, slaughter pistol, pentobarbitone sodium), but not all officers are trained in all techniques or have access to all equipment. At present, most RSPCA officers carry a .22 captive bolt and either a .32 Taurus/Cash pistol or a .38 Smith and Wesson pistol. Most will also carry pentobarbital solution (PBS). The only reason they would not carry PBS or the firearm is that they have yet to complete their training. The organisation also has eleven 12-bore shotguns located with certain officers around the country, all of whom have firearms licences to allow them to use solid slugs. A 12-bore shotgun with solid slug was used with a pilot whale in the UK in 2012 (see Item 6.4.1.4). The RSPCA agrees that dolphins and porpoises can be dispatched with either PBS or pistol. It does not yet have any additional guidelines relating to the euthanasia of large cetaceans with firearms.

6.4.1.2 PROCEDURES

The procedures currently used for shooting large cetaceans are summarised in Table 2.

6.4.1.3 VARIABLES AND CONSTRAINTS (ANIMAL SIZE, POSITION, LOCATION IN SURF/LAND, ETC.)

In any euthanasia event it is essential to take local conditions, expertise, laws and availability of equipment into account. Variables and constraints were discussed within the context of the various presentations and individual case reports; an overall summary of issues to be considered with respect to euthanasia approaches is given under Item 9.

6.4.1.4 EXAMPLES

Meyer began the discussion of the use of ballistic methods for large (up to 12.3m body length) baleen whale euthanasia by presenting three cases comprising two humpback whales and a sei whale from South Africa. Two of these cases were considered successful. The third case was a humpback whale where conservation officers initially under-estimated body length (it had initially been estimated at 6m but when measured at necropsy it was 8.39m). The marksman was requested to stand in front, firing slightly from above, aiming 10cm behind the blowhole at a 45° angle (firing twice repeatedly down the same hole) using a .375 calibre weapon with full metal jackets. These instructions appeared to be followed but this did not euthanise the whale. After further consultation, further shots were fired into the head close to the site of the first shot. In total 12 shots, were fired into the head in an attempt to destroy the brain, and a further three laterally aimed at the heart. Shooting was unsuccessful and, at night, the whale drowned during the next high tide. The position and the trajectory of the bullet holes were examined using dowel sticks. Major cranial bone damage was found but when this bone was removed the cranium below was undamaged. During the necropsy, the box of ammunition was examined and it was found that the cartridges were in fact inappropriate (Super X H&H Magnum silver tip cartridges manufactured by Winchester, with a muzzle velocity of 2,550 foot/second and muzzle energy of 4,330 foot pounds). It is possible that, given the correct total length of this whale an alternative decision of euthanasia may have been chosen and it is important that the length be determined accurately during a stranding. Post-mortem examination indicated the area of the head recommended to be targeted was correct, and the absence of intact bullets in the whales head indicate that these disintegrated on contact with the bone. They did however deliver sufficient energy to break-up a proportion of the cranium. It is also possible, that had a number of shots been fired repeatedly at the specified site and angle, even using soft-tipped bullets, that they may have penetrated the skull. The recommendation of a .375 calibre firearm firing full metal jackets would likely have led to successful euthanasia. All of this indicates with greater emphasis the importance of following specified instructions and using specified equipment.

As discussed under Item 6.4.1.1, Coughran presented cases from Australia where ballistics are routinely used to euthanise whales <6m in body length, including those euthanised with hydrostatically stabilised bullets. *Woodleigh* bullets are hydrostatically stabilised non-deforming solid bullets. These projectiles are constructed from copper-alloy (Thomas, 2013) and have been developed to allow deep tissue penetration in large, thick boned game species. These projectiles were chosen on the basis of blunt-nosed non-deforming projectiles having previously been shown to successfully penetrate cetacean craniums (Øen and Knudsen, 2007) while shotgun solids, expanding projectiles and pointed-nosed projectiles have proven unreliable (Blackmore *et al.*, 1997; Hampton *et al.*, 2014; IWC, 2000).

Grogan presented the cases of two dolphins and a pilot whale stranded in the UK. In December 2011 a striped dolphin was stranded near to Milford Haven. This dolphin was emaciated but had been re-floated by rescuers and subsequently stranded a second time. The animal was shot with a slaughter pistol using a single round (.32 ammunition) through the open blow hole at a 45 degree angle facing the tail and at point blank range. The RSPCA officer who performed the operation was quite concerned about the procedure but

Table 2
Physical methods for potential use in larger whale euthanasia.

Name	Effect/timing	Method	Species used on for euthanasia (reference)	Concerns		Comments	Cost estimate capital/disposable
				Human hazards	Environmental hazards		
Implosion	Cerebral pressure maceration/instant	Stabilise body, pyramidal charge, sandbags, detonate.	Humpback, right whale (Coughran *et al.*, 2012)	Explosion	Collateral damage to buildings	Need licensed shot firer	£0/£300
Ballistics	Brain and or spinal cord trauma/instant assuming good aim	Target brain or cervical cord, using landmarks	Pilot, orca, small humpbacks, false killer, minke	Overshoot and ricochet		<6m (could be bigger).	£1,500/£5
Sperm Whale Euthanasia Device (SWED)	Brain trauma/instant assuming good aim	Lateral or ventral	Sperm	Recoil	None	Limited skill and equipment availability	£4,500/£10
Explosive grenade	Cerebral, cervical and thoracic trauma/ depends on aim	Harpoon cannon 50 or 60mm with penthrite grenade	None yet	-	None	Unavailable in many regions	£?/£?
Darting gun with explosive grenade	Cerebral, cervical and thoracic trauma/ depends on aim	Hand held darting gun with penthrite grenade	None yet	-	None	Unavailable in many regions	£?/£?
Exsanguination	Blood loss/slow	Cardiac or axilla safest and fastest	Sperm, right, pilot (Harms *et al.*, 2014)	Animal reaction - tail worst	None	Slow	£30/£0
Spinal lance	Decerebration/ cerebral function not lost immediately	Hand held behind blowhole into foramen magnum to sever spinal cord and vessels	None yet	Animal reaction	None	Used in Faroese pilot whale hunts but does not destroy brain	£?/£0

the post-mortem report stated that the animal died instantly. In comparison, the same RSPCA officer was asked to attend another dolphin that had stranded at Port Talbot in the spring of 2012. Again this dolphin was emaciated and the decision was taken to euthanise the animal. This was done by a vet with pentobarbital solution (PBS) into the vein in the tail, but this method appeared to the officer to take longer than shooting to kill the animal.

A pilot whale, which stranded at Milford Haven in 2012 was around 5m long. The whale was lulling around in about 1.25 metres of water and seemed 'very distressed'. It was agreed that euthanasia was the best option and the animal was shot with a shotgun at point blank range through the blow hole with a solid 12 gauge slug. Two shots one after each other and then a third, with the angle varied on each shot. The operator was standing in the water. In hindsight a shot from the boat alongside the whale would have been preferred, but the necropsy confirmed the animal had been euthanised effectively.

Another successful UK euthanasia case involved a stranded 4.87m long juvenile female minke whale in Scotland in 2013, which was shot with a single shot Blaser deer and moose stalking rifle with 6mm by 65mm, 129gn bullet exploding projectile.

6.4.1.5 SAFETY

As with chemical agents, all ballistic techniques for euthanasia of stranded cetaceans come with associated risk. Risks include harm to human individual(s), risks to the general public and risks to the environment. The various risks (human, domestic animal/wildlife and environmental) of the different ballistic methods used for cetacean euthanasia are summarised in Table 2.

6.4.2 Explosives

6.4.2.1 TYPES OF EXPLOSIVES, EXAMPLES OF PROCEDURE

Coughran summarised Coughran *et al.* (2012), which presented information on a safe, effective method of euthanasia for large beached humpback whales using a cranial implosion technique to achieve the quickest time to death currently available to operational staff from the Western Australian Department of Parks and Wildlife (DPaW). Initial triage evaluation of a beached live large whale presents many difficult management considerations; an injured or weak, non-responsive whale cannot simply be dragged out to sea. If left unmanaged once washed ashore, such whales could attract sharks and increase the likelihood of shark attacks on humans. Doing nothing is rarely a desirable option in Western Australia unless the animal is moribund and likely to die in a short time frame. Experience has shown that some whales may in fact take weeks to die because their accrued fat reserves enable them to survive without eating for extended periods, despite being too weak to swim and feed. If a whale is likely to suffer for an extended period of time then euthanasia must be considered. The DPaW Ethics Committee is fully appraised of such processes and obtaining endorsement from that Committee's is an essential part of the management process. Audits are undertaken to ensure the humane handling of all events. The basic pathways for managers are rarely straightforward, however. For example, the management process can be vulnerable to complication by human emotion and unrealistic expectations (particularly from the media) that continually work against open systems based learning processes that are much needed in this field. Cultural sensitivities are also a potentially important factor for consideration prior to euthanasia (e.g. Aboriginal cultural practices).

However the fundamental challenge relates to the technical difficulty of euthanasia of an animal of such sheer size. Chemical and small ballistic methods are considered inappropriate in Australia for the humane destruction of larger species such as baleen whales (Blackmore *et al.*, 1997). In Western Australia the Department of Parks and Wildlife (DPaW), formerly the Department of Environment and Conservation (DEC), is responsible for the administration of the Wildlife Conservation Act 1950; managing issues relevant to fauna as defined under that Act, which includes whales (cetaceans). In this capacity, DPaW has adopted the Australian Inter-Service Incident Management System

(AIIMS), which provides a total systems approach to all incident management involving risk. The Police Department is responsible for the critical issues of public safety that emanate from public proximity to powerful animals and from the use of explosives, and local government authorities are responsible for public health issues and are therefore always involved in the management of each whale beaching incident. In Western Australia, a shot-firer's licence, issued under the provisions of the Explosives and Dangerous Goods Act 1961, is required to handle and use explosives and the use of explosives involves considerable expertise, for which DPaW relies heavily on outside personnel and agencies, including the military. More details of the actual euthanasia process are summarised under Item 6.4.2.4 below

Meyer presented information on the use of explosive euthanasia methods for large whales in South Africa. The national authority (the Department of Environmental Affairs) is assisted with large whale euthanasia throughout the country by the South African Police and local Disaster Management groups. Human safety is paramount and only suitably qualified and active police explosive unit members with experience in large whale euthanasia or having practiced on large whale carcases are permitted to undertake implosions.

Key factors in the decision making process include species, location, size of the animal, especially the structure and thickness of blubber, muscle and skull. The most common species involved are adult southern right whales and humpback whales; suggested charge sizes are 6kg for southern right whales and 4kg for humpback whales. Since *Conepak CP40*[2], the preferred explosive, degrades over time, Meyer noted that the police have recently replaced this product with PE 4, a military explosive hand packed into Conepak casings. Electrical detonators have been replaced with water proof Allen Vanguard shock tube initiators to eliminate risk concerns over static electricity and radio interference. As elsewhere, key factors in a successful event are:

(1) stabilisation of the whale;
(2) amount of charges;
(3) position and placement of charges;
(4) conveying of information and reasons for euthanasia to the public; and
(5) safety issues.

In calm conditions sandbagged charges are held in place with two weighted ropes. In high energy areas or if animal partly in water, 4 small lines with fish hooks and weighted sandbags are used to hold charges in place. Public/media and vehicles are moved to a safe distance using City law enforcement officers and the public are kept informed by the incident controller (via loudhailer if necessary). Police also inform local residents if houses are nearby to e.g. open windows to avoid air blast (over-blast pressure wave) damage. An audible warning and countdown are given prior to the blast.

Six case histories were considered (see Item 6.3.2.4) and discussed and possible improvements suggested where appropriate.

A comprehensive list of euthanasia protocols using explosives was compiled. This included a summary of the method, timing, effects, species used (with references) and an assessment of capital and consumable costs and an assessment of the risks for human operators and wider environment concerns (Table 2).

[2]*http://www.oricaminingservices.com/.*

6.4.2.2 PROCEDURES

The technique for peri-cranial implosion currently used for euthanasia of large cetaceans is summarised in Table 2 and described in detail in Coughran *et al.* (2012).

6.4.2.3 VARIABLES AND CONSTRAINTS (ANIMAL SIZE, POSITION, LOCATION IN SURF/LAND, ETC.)

Variables and constraints were discussed within the context of the various presentations and individual case reports (see Items 6.4.2.1 and 6.4.2.4).

6.4.2.4 EXAMPLES

Coughran presented cases from Western Australia where commercial grade directional charges (cranial implosion) are routinely used to euthanise whales >6 metres in body length. The cranial implosion technique is described in detail in Coughran *et al.* (2012). He showed a photo of the baleen whale skull illustrating that the optimal position for explosives in baleen whales is a dorsal position where the skull is relatively thinner than the lateral route.

Some focus was placed on an example of a 9.5m humpback whale which entered Albany harbour, became lodged on a sand bank and was only fully exposed at low tide. The team felt that it was too active to intervene safely. When it became sufficiently moribund after two weeks, a decision was reached to intervene. The explosive charge was successfully placed on the lateral side of the head (this was the only stable platform available for location of the explosives in this case) and detonated. One unexpected problem associated with case 2 described in Coughran *et al.* (2012) was a low-altitude media helicopter overflight that risked premature explosion of the detonator via RF signal; yet again this emphasises the importance of managing the public and the media.

Coughran also presented the first trial of the cranial implosion technique on a toothed whale – a dead 10.8m sperm whale that had stranded in Western Australia in August 2013. The approach followed Coughran *et al.* (2012). The whale was in a lateral position and the explosive charge was placed 60cm directly posterior to the left eye. The total charge consisted of 22 sticks of 125 gram Powergel Magnum explosive secured with rope and sandbags. The sticks were taped together to form a pyramid and two detonators were used. The charge, which was detonated safely once all personnel were at a safe distance, created a 0.5m x 0.8m elliptical deficit in the skin and blubber. There was full thickness penetration of the posterior lateral aspect of the left side of the head with severe fracturing to the skull and massive trauma to the cranial structures. The massive destruction to all local cranial structures confirmed that instantaneous insensibility and death would have resulted in a live animal. He concluded that the positioning of the explosive charge was ideal for a sperm whale. This method of lateral placement of explosive charges was also deemed appropriate for public and operator safety. A trial of this technique on a live stranded toothed whale would be considered ethical based on the findings of this post-mortem study. The method is likely to provide the most rapid death of all options currently available in Australia for the euthanasia of large stranded toothed whales.

As with all euthanasia methods, Coughran emphasised the need to test methods on dead animals first to develop methodological expertise and obtain correct anatomical knowledge (e.g. necropsies on strandings). The use of sandbags (or water bags) to assist the focus of the implosion was recommended, care must be taken to ensure sandbags filled with sand do not contain rock to avoid rocks becoming projectiles on detonation. It was noted that in Australia,

unlike South Africa, stranding responders are only able to obtain civilian grade explosives that are cheaper but less effective than military grade.

Meyer presented information on six successful cranial implosion cases in South Africa during a 12 year period (August 2001-13), comprising four humpback whales and two southern right whales using formed (directional) explosives charges. The latter a 10.4m right whale (sub-adult female) and neonate forms the only two records of right whales at the Workshop euthanised using explosives.

Amaira presented information on unexploded ordnance disposal by the Royal Navy in the UK. The Royal Navy have assets/teams around the UK to dispose of ordnance on a planned and reactive basis. They have a variety of tools/equipment available including a user-filled shaped charge which could be used for cranial implosion euthanasia technique in the UK. The Royal Navy also possess other potential methods for large whale euthanasia including a range of powerful ballistics. The Royal Navy also operate under a recognised legal framework for beach ordnance disposal, which could be applied to site-management for whale euthanasia. The authority to deploy these methods would need to come from another lead agency (yet to be identified in the UK). The lead authority would be responsible for environmental control and press liaison.

The Workshop **commended** the progress that had been made with the various physical methods of euthanasia.

6.4.2.5 SAFETY AND OTHER CONSTRAINTS

All explosive techniques for euthanasia of stranded cetaceans come with associated risk. Risks include harm to human individual(s), risks to the general public and risks to the environment. The various risks of the different explosive methods used for cetacean euthanasia are summarised in Table 2.

6.5 Relevant whaling tools and techniques

Considerable work has been carried out in several countries to improve weapons used for whaling in the last decades. Øen presented a detailed and historical overview of much of this work.

6.5.1 Exsanguination

Old style whaling often relied on exsanguination to achieve death of the animal. Harms presented a case of a northern right whale that stranded on offshore sand banks where access was only possible by helicopter at low tide. Over a two day period a cocktail of several drugs (meperidine, acepromazine, midazolam, medetomidine) was injected (intramuscular and retrobulbar) in addition to intranasal administration of acepromazine and isoflurane. Death was finally achieved by exsanguination via a deep cut to the caudal peduncle. The time to death after the cut was 64mins and the euthanasia attempt was therefore considered unsatisfactory.

Yamada provided background on dealing with cetacean strandings in Japan where there is no formal national or prefectural policy on cetacean euthanasia. He described the difficulties he experienced in obtaining chemical agents to humanely euthanise cetaceans. He presented a case history on a single stranded sperm whale neonate that was euthanised. The animal was exsanguinated via cardiac puncture with a preceding dose of chloroform, the only available chemical material for relief, through the airway expecting an anesthetic effect to reduce the distress. Time-to-death was estimated to be approximately 18mins.

The Workshop **agreed** that exsanguination could be considered as a method for euthanasia *in extremis*, but is not recommended routinely due to the welfare issues related to potentially prolonged times-to-death (Table 3).

6.5.2 Penthrite grenade

Øen presented on the use of supersonic explosive penthrite grenades developed for and used in the hunt of large cetaceans of various species in Greenland, Iceland, Japan, Norway and USA (Alaska). Except for the fin whale hunt in Iceland (which uses a larger gun) the grenades are delivered with small type whaling harpoon guns or hand held Darting guns (Alaska). The penthrite charges vary by species and operation but are relatively small (22g, 30g, 45g and 100g).

Penthrite detonates at a very high speed creating a series of excess (very high) and negative (sub) pressure waves that travel extremely fast through the body. These alternating pressure waves causes severe and fatal neuro-trauma and intra-cerebral bleeds and have a devastating effect also on other live tissues. Penthrite has been shown to be highly effective. When the target is immobile like an entangled or stranded whale a 100% instant kill can probably be assured. The hand-held darting gun used by Alaskan Eskimos would probably be the most useful and effective penthrite delivery system to euthanise both large stranded and entangled whales but needs some further development. Using penthrite, the grenade should be directed to the chest or neck area. These weapons are probably the most rapid and effective tools for entangled and stranded whale euthanasia in countries and regions where penthrite grenades and delivery weapons already exist (e.g. Greenland, Iceland, Japan, Norway and USA (Alaska)).

6.5.3 Firearms (and see Item 6.4.1)

Øen presented information on studies and practical experience on the use of rifle bullets in whale hunts that could assist in developing euthanasia techniques for stranded or entangled animals; the objective was to determine/develop equipment that led to specific terminal ballistic characteristics. Different bullets are used for several types of hunt of various species. Small cetaceans such as white whales, narwhals, pilot and killer whales are regularly hunted using rifles. For euthanasia of cetaceans up to the size of a pilot whale, he recommended use of soft pointed or full jacket bullets with minimum calibre .30-06. Large calibre rifles of .375 and .458 with round nose full-jacket bullets (and see Item 6.4.1) have been demonstrated to be very effective to euthanise minke whales and also a 12.5m stranded male sperm whale. However, as water has a braking effect on bullets, shots should never be directed to body parts that are underwater. The shot should be directed at the brain or upper neck to secure instant death.

In organs with no room for expansion like the brain, the sudden energy transformation from a passing projectile will cause an almost explosive rise in the internal pressure and the brain therefore might be almost totally damaged ('Krönlein' shots). Successful use of a rifle depends largely upon the gunner knowing where to aim the shot. Figures and anatomical maps showing the position of the brain and higher neck in relation to external features like flippers, eyes, blowhole etc., have been prepared at the Norwegian School of Veterinary Science for minke whale hunters. Similar diagrams/maps are also needed for other cetacean species where the rifle can be recommended for euthanasia.

6.5.4 Lance

Øen described the use of the spinal lance in conjunction with a ball-pointed blowhole hook for small cetacean hunts in the Faroe Islands, where the lance is used to sever the spine and disrupt the vascular perfusion to the brain. He noted

that there had been considerable work on improving the techniques used in the Faroe Islands with the North Atlantic Marine Mammal Commission. The use of the new 74cm long spinal lance is now mandatory in the Faroe Islands. The Workshop **agreed** that this approach was not suitable for large whales. Given its terms of reference, the Workshop did not discuss small cetacean euthanasia methods.

6.6 Other euthanasia and rapid killing techniques

Methods of euthanasia via asphyxiation with argon gas or water (drowning) were discussed. Butterworth noted that argon gas is used for euthanasia in domestic animals but none of the Workshop participants had any experience of actually using it in any cetacean species. In the absence of any data or personal experience the Workshop **agreed** that it could **not be recommended** as a viable and effective method for euthanasia of stranded cetaceans.

7. CARCASS DISPOSAL

The Workshop spent relatively little time on this Item. It noted that a range of carcass disposal methods exist including beach burial, landfill burial, disposal at sea, incineration, rendering and composting. There is considerable variation in methods between countries, partly as a result of legal requirements and availability of equipment. The Workshop **stressed** that the use of chemical euthanasia options may preclude some methods. It was noted that in the UK, chemical euthanasia usually renders incineration the only allowable option. The Workshop **recommended** that for chemical methods, removal of the injection site to limit risk of disposal and potential for relay toxicity is a minimum requirement. It noted that disposal of carcases after the use of chemical agents may be particularly problematic in some environmentally sensitive areas (e.g. aquaculture and Marine Protected Areas).

The Workshop also noted that burial at sea can introduce risks associated with shark scavenging (e.g. off South Africa). Leeching of oil or exposure of body parts can also be an issue with burial on beaches with soft substrate. In the USA, composting is felt to be a good method of carcass disposal (Schwarz *et al.*, 2013). The Workshop highlighted the need to respect any cultural factors in carcass disposal such as that relating to indigenous communities (e.g. in New Zealand, Australia and Hawaii).

8. NEEDS AND CONSTRAINTS IN VARIOUS ENVIRONMENTS

8.1 Consideration of responses in mass *vs* single strandings

Gísladóttir described the background to live stranding responses in Iceland with an emphasis on two examples of difficult mass stranding events of smaller cetaceans occurring in 2013. There are guidelines provided in a national response plan for strandings in Iceland but there is relatively little training or a formal chain of command.

The first event involved six killer whales, two of them young calves, stranded on a sandy beach in bad weather and heavy surf. The responders found one adult and one calf already dead, managed to refloat one adult whale and one calf (although their ultimate fate is unknown), and successfully euthanised the remaining two using a .416 calibre hunting rifle.

The second event involved an unknown number (50-300 approx.) of pilot whales which entered a harbour during a bad storm. A large number of the whales stranded: some dead, some moribund and some alive. Members of the public tried to rescue or, where not possible, euthanise the whales. Some members of the public took meat from the dead animals. Methods used for euthanasia were not followed according to the guidelines in the national response plan, with most of them exsanguinated without sedation. The great difficulties in managing such a large event were stressed.

The Workshop recognised the particular difficulties associated with mass strandings. Reiss and Simmonds presented a short review on the social, behavioural, communicative and cognitive aspects of stranded cetacean rescue and euthanasia scenarios. They suggested that there is a potential for stress or distress in stranded cetaceans in close proximity to others that are euthanised during mass stranding events. They noted that this matter would benefit from further consideration relating to mass stranding events and the likely effect on conspecifics of distressed individuals in the shallows or on the shore.

The Workshop **agreed** that there was merit in holding a subsequent Workshop, perhaps under the auspices of the IWC, which could consider the specific management, social, welfare and euthanasia aspects of cetacean mass stranding events.

8.2 Lack of training or resources

The Workshop **recognised** the need to learn and practice new and existing euthanasia techniques on large dead cetaceans prior to the use in live stranded cetaceans. Gaining experience is not easy as thankfully live stranding events are relatively rare. The Workshop also recognised the difficulties of setting up schemes in countries with long and sparsely populated coastlines and in developing countries where resources are rare. Despite the difficulties, the Workshop **strongly recommends** that euthanasia of cetaceans should not be conducted by untrained personnel, as this may endanger humans and increase the suffering of the animals.

8.3 Cultural factors

The Workshop **agreed** that local cultural factors must be carefully considered as part of an effective euthanasia management plan.

9. DECISION TREE AND RECOMMENDED TECHNIQUE MATRIX: GUIDELINES AND PRINCIPLES

As noted at the Maui Workshop (IWC, 2012), the development of any 'decision tree' should be regarded as a dynamic process that is refined based on shared experiences and increased data collection and analyses. The present Workshop recognised that while there may be generic guidelines, each case needs to be treated on an individual basis and decisions taken will depend on a large number of factors related to human safety and the welfare of the animal or animals involved. The Workshop **stresses** that human safety should always be considered paramount, as is the case with disentanglement efforts (IWC, 2013). The key components/decision points can be summarised as follows (note that these are not mutually exclusive and some components will take place simultaneously):

- taking an informed decision as to the appropriate course of action once a live stranding has been reported;
- if the decision is taken that euthanasia is an appropriate response, what method should be used;
- manage public expectations and behaviour, providing as full information as possible on the process being undertaken; and

- collection of appropriate data, full documentation of all aspects of an event and the sharing of experiences/data to refine decisions and situation handling in the future.

In the sections below, the Workshop highlights some of the major factors that should be considered under each of these headings. It **notes** that local legal, cultural and logistical/financial considerations may be very different and that it is not possible to develop a single definitive decision tree. The Workshop **stresses** the need to understand and recognise the many cultural, political and socio-economic differences that exist between (and within) countries that will influence the availability and choice of euthanasia techniques.

With respect to the overall process, experience has shown that it is extremely important for countries/organisations to proactively establish an incident response protocol so that when live strandings are reported, appropriate agencies and organisations are aware and understand their roles and responsibilities. The Workshop **recognises** the need for the development of collaboration between national and provincial/state authorities, the military and police, scientific institutions and rescue organisations in dealing with stranding events, noting the benefit of pre-emptive clear delineation of responsibilities and a decision framework.

The Workshop **recommends** that IWC member nations refine existing or develop new incident response protocols based on the principles and guidelines found in this report. To assist in this process, collaboration with other relevant organisations is **encouraged**, e.g. the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Sea (ACCOBAMS) and the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS). IWC member countries with existing protocols are **encouraged** to submit them to the Commission for inclusion on the IWC website (see below) to provide examples for those without protocols to assist in their development; the question of translation of protocols into various languages should be considered by the Commission.

As noted under Item 8.1, for a number of reasons, mass strandings represent considerably more difficulties both from the point of view of logistics and from an animal welfare perspective. The Workshop did not have the time or data to fully address this issue and this is discussed further under recommendations for future work (Item 9.4).

9.1 Taking an informed decision as to the appropriate course of action once a live stranding has been reported

The Workshop agreed that while successful rescue is the ideal outcome for live stranded large whales, in most cases rescue will be difficult, if not impossible. Rescue attempts, however well-intended, may subject animals to significant stress and pain; they should only be undertaken under the supervision of trained personnel and ideally after a full evaluation by experienced veterinarians. It is essential to manage the expectations of all involved including potential rescuers as well as the public and media. In deciding whether or not euthanasia is the appropriate response, several factors need to be considered, of which human safety is paramount, followed by the welfare of the animal. In any cetacean stranding event, precautions against zoonoses (a disease or infection that is naturally transmissible from vertebrate animals to humans and vice-versa) must be taken.

As noted in previous IWC Workshops (IWC, 2012; 2013), any decision to euthanise should be based on a careful scientific and practical evaluation of an individual situation, not perceived or actual public pressure. It is important that all involved are aware of who has the final responsibility for the decision. Key factors involved in making the decision whether to attempt rescue, carry out euthanasia (which may occur after rescue attempts have failed as well as being the initial decision) or allow the animal to die (with palliative care, if possible) can be summarised as:

(1) an evaluation (ideally by an experienced veterinarian) of the health status of the animal or animals, the likely prognosis and the level of suffering;
(2) local environmental conditions (including ease of access, substrate, weather);
(3) factors relevant to public health and safety; and
(4) availability of expertise and equipment.

The Workshop **recognises** that taking such a decision will often be difficult and involve a complex risk assessment. It is important to try to ensure that ideally before and certainly once a decision has been taken, the public and media are informed of the process and any decisions, and that all agencies and organisations involved provide the necessary support to the decision maker. The Workshop offers the following more specific advice.

(1) Wherever conditions preclude adequate human safety (including personnel involved in potential rescue and/or euthanasia), management of the beach and public until and if conditions change should be the priority, while letting nature take its course for the whale.
(2) High surf, difficult boat or vehicle access, tidal range, rocky area and sharks all reduce the chance of re-floatation. Animals trapped swimming in a lagoon have a better prognosis compared to those that are beached. Repetitive strandings worsen the prognosis.
(3) Beached large whales have a fundamentally poor prognosis that worsens with time; large live stranded whales are less likely to survive than smaller ones although there is species variability. Large whales are not suitable candidates for rehabilitation facilities. Dependent calves and neonates will not survive without a mother. In mass strandings, the mother may be difficult to identify.
(4) Poor prognostic indicators include: poor body condition, demeanour, cyamid proliferation, weak respiration, abnormal haematology or serum chemistry, chronic entanglement, physical injuries such as propeller wounds, blunt trauma, spinal deviation, extensive blistering, peeling, and scavenger damage. Apparently healthy animals may still have a very poor prognosis given prevailing conditions.
(5) After failure to refloat after two high tides, prognosis is very poor. At this time, plans in place for euthanasia should be implemented.
(6) Without suitable resources including the availability of sufficient expertise and equipment, rescue or euthanasia may not be practical.

9.2 If the decision is taken that euthanasia is an appropriate response, choosing an appropriate method

If, after careful consideration of the above factors the decision is made that euthanasia is in principle the most appropriate response, then a number of factors must be taken into account. As discussed earlier in the report, several methods to achieve as rapid and painless a death as possible have been developed and the strengths and weaknesses of these are summarised in Tables 1-3; not all of these will be available in each country or region for legal, cultural,

Table 3
Assessment of methods for potential use in stranded baleen, beaked and sperm whale euthanasia.
N.B. Assumption of effective use and appropriate mitigation in all methods.

Method	Time to death	Potential for pain and distress Low/medium/high	Level of mitigation required for human safety Low/medium/high	Level of mitigation required for environmental safety Low/medium/high
Pre-medication + KCl	Minutes	Low	Low	Medium
Pre-medication + pentobarbital	Minutes	Low	Low	High
Pentobarbital	Minutes	Low	Medium	High
Ballistics	Instant	Low	High	Low
Implosion	Instant	Low	High	Low[3]
Sperm Whale Euthanasia Device (SWED)	Instant	Low	Medium	Low
Explosive grenade[1]	Instant	Low	Medium	Low
Darting gun with explosive grenade[2]	Seconds	Low-medium	Medium	Low
Pre-medication + exsanguination	Many minutes	Low	Medium	Medium

[1]Only in water. [2]Needs modification for safe use on beach. [3]If no habitation in vicinity.

logistical or financial reasons. The Workshop **stressed** that euthanasia **must not** be carried out by untrained personnel.

A decision whether or not to incorporate sedation/relaxants into the euthanasia process must also be taken based on availability, logistics (including expertise) and the welfare of the animal. However, it is strongly suggested that it is attempted for chemical euthanasia methods.

Tables 1-3 represent a valuable summary of the appropriate tools and information on factors needed in the decision-making process. In terms of individual decisions, the **most important factors** are:

(1) whether the appropriate expertise and equipment can be brought to the scene in an appropriate timescale;
(2) whether human safety (of the personnel undertaking euthanasia as well as people in the vicinity of the event) can be guaranteed; and
(3) factors related to the safe disposal of the carcass.

As noted under Item 9.1, it may be decided that it is not possible to safely and effectively euthanise an animal and that applying palliative care until the animal dies, if possible, may be the appropriate course of action.

9.3 Managing public expectations and behaviour

Strandings and euthanasia protocols must consider the issue of public safety. The issue of managing public expectations and behaviour has been shown to be of great importance for any live stranding event. Clearly, numbers of 'spectators' at an event will depend on several factors including ease of access and weather; however, numbers of 'virtual' spectators can be enormous given modern communications and media. It is clearly important to try to provide as much clear information as possible in a timely manner to the public and media, on the decision making process as well as the rationale behind the course of action chosen and the practical action being taken. While the precise way in which this is handled will depend on local conditions, it is important to determine who will provide the information and how, in line with the incident response protocol. Live stranding events that lead to euthanasia in accessible areas normally involve the police in some countries.

The Workshop **stresses** that having internationally agreed principles and guidelines such as those incorporated in this report that are made publicly available will greatly assist in providing information to the public and in managing expectations; while not an easy message to communicate, being able to explain a decision process that may not result in rescue attempts is vital.

This issue is considered further under Item 10.

9.4 Data collection, documentation and training

The Workshop recognised that live stranding events are relatively rare; determining and evaluating appropriate responses including different euthanasia approaches is thus difficult with low sample sizes and multiple affecting factors. It therefore **stresses** the need, for each event, for the collection of appropriate data, full documentation of all aspects of an event and the sharing of experiences/data to refine decisions and situation handling in the future. This process has begun at the present Workshop and all participants recognised the great value of the information provided on both successes and failures; the latter can be extremely informative in developing improvements and preventing mistakes being repeated. A number of data collection and reporting protocols exist in different countries. Based on protocols available to the Workshop and expertise within the group, a broad template was developed to assist future data collection and reporting efforts; this is given as Annex C and the Workshop **recommends** the broad template outlined. As discussed below, it also **recommends** that the IWC facilitates the exchange of information amongst experts (see Item 10.1 below), including continuing to publish relevant papers in the *Journal of Cetacean Research and Management* (e.g. Coughran *et al.*, 2012; Øen and Knudsen, 2007).

The Workshop also **recommends** the addition of a number of 'outcome' fields to the existing IWC National Progress report database for live strandings: released/rescued; euthanised (method categories as in Table 3); no intervention.

The Workshop **stresses** the great importance of practise and training for both existing and potentially new techniques. Many of the advances that have been made to date have involved experimentation and training with dead animals and the Workshop **recommends** that this continues; it does not recommend proceeding to work on live strandings without first gaining experience on dead animals.

Finally, the importance of post-mortem examination of animals that have been euthanised is **emphasised** where this is possible. Information from such examinations is essential to evaluate and refine different techniques.

9.5 Contact list of cetacean euthanasia experts

The Workshop noted the value of establishing a voluntary group of experts that can be consulted by the IWC and others to: (1) provide advice on protocols and methods to relevant authorities; (2) provide objective information to the media if requested; and (3) assist the IWC Secretariat in populating the IWC website. The Workshop **recommends** that this list be maintained by the IWC Secretariat.

10. DISSEMINATION OF PRINCIPLES AND GUIDELINES AND OTHER MATERIALS DEVELOPED

10.1 Through the IWC

The Workshop noted the great potential of the IWC to facilitate work on live strandings and euthanasia techniques. It noted that the approach developed with disentanglement provides a valuable model (IWC, 2013). It therefore **recommends** the establishment of a live stranding response component of the IWC website with a layered capacity which includes:

(a) a public component that provides a broad overview of the issue and highlights the principles, including the need for responses to be overseen in all cases by experts, and guidelines, links to existing strandings and euthanasia protocols;
(b) a public but more scientific component that summarises the available approaches and data with links to relevant reports and publications which will be of relevance to marine mammal scientists, veterinarians and pathologists; and
(c) a secure section for accredited experts that *inter alia* allows exchange of ideas and data, including provision of information, requests for advice, the ability for discussion of particular events and situations and the collation of practical guides/schematics for application of various euthanasia techniques.

The Workshop noted that an improved public component of the website and dissemination of the principles and guidelines will also assist local scientists and veterinarians in the provision of information during events.

The Workshop also **stresses** the extreme importance of training and exchange of expertise. It **encourages** IWC member countries to facilitate the exchange of information, expertise, technology and training.

10.2 Interfacing with the public

10.2 1 Communicating with scientists

The Workshop recognised the importance of disseminating information to other relevant scientists including veterinarians, animal welfare experts and marine mammal biologists. It suggested that this could be achieved by presenting information to the relevant professional bodies (e.g. the Society for Marine Mammalogy, European Cetacean Society and International Association for Aquatic Animal Medicine). It also noted the value of the scientific component of the IWC website (Item 10.1 (b) above) in this regard.

10.2 2 Media

A large whale stranding presents a complex problem as it raises issues of animal welfare, public safety and personal safety (of public officials), and is usually the subject of intense public concern and interest and of extensive media scrutiny. The Workshop recognised the importance of dealing with local and national media that will vary from region to region. It **agrees** that the improvements to the IWC website proposed above will assist greatly in adding an international perspective that can be used by local responders. It also noted the challenges that arise out of the widespread use of social media including Facebook, YouTube and Twitter. The list of experts discussed under Item 9.4 can play a role in informing the media; while they would not formally be speaking on behalf of the IWC, it was **agreed** that it was appropriate for the Secretariat to provide names of appropriate experts in response to media enquiries.

10.2 3 General public (e.g. key messages, avenues to communicate)

The Workshop **agrees** that it was important to ensure that the public (and the media) are provided with concise and accurate information about live strandings of large whales, which may have suffered critical internal injuries when beached even if externally they appear 'healthy'. One common reason for euthanasia of an immovable healthy animal is if it is lying on its side, and it is starting to drown as the tide returns. Failure to communicate the basis for such a decision can lead to substantive online criticism. The website(s) of response organisation(s) are a valuable channel of both background material and situation updates, and should keep pace with other channels of public and media communication. As noted under Item 9.1, rescue is the least likely outcome and rescue attempts may increase the suffering of animal before it dies. Euthanasia is often the most suitable response from an animal welfare perspective and human safety is paramount. However, euthanasia of such large animals is normally difficult and may not always be possible. Methods available fall under three categories: chemical, ballistics and explosives. Which is most appropriate and practical will depend on local circumstances and efforts should only be undertaken by trained experts. Cetacean brains are extremely well protected and while use of explosives may appear to be extreme, with appropriate expertise and explosive power, it is extremely effective for large animals.

11. DATA GAPS, PROMISING RESEARCH AND FUTURE DIRECTIONS

With respect to data gaps, the Workshop referred to its recommendations above on data collection and exchange (e.g. see Items 9 and 10). Tables 1-3 summarise what is known about methods but the Workshop **agrees** that more work is needed on the environmental persistence and potential effects of some chemical methods and **encourages** this research and provision of information. The Workshop **notes** the importance of composting as a safe and environmentally positive means of disposal of cetacean carcasses (Schwarz *et al.*, 2013); it **encourages** national and local authorities to facilitate this method of disposal where appropriate.

The Workshop recognised the effectiveness of penthrite and **encourages** the development of a darting-gun type delivery system that it is suitable for beached animals and may also be appropriate for entangled whales at sea. It **requests** that a progress report is provided to the 2014 Annual Meeting of the IWC.

Related to this, the Workshop **endorses** a previous Workshop recommendation (IWC, 2012) concerning the need to develop methods for euthanasia of cetaceans at sea (entangled or otherwise requiring human intervention). It **agrees** that this may be facilitated by the holding of a future technical Workshop and **requests** that this be considered further at the 2014 Annual Meeting.

At several places in this report, the Workshop highlighted difficulties with mass stranding events. It therefore **recommends** that the IWC consider holding or facilitating the holding of a future Workshop on mass strandings events, including management, social, welfare and euthanasia considerations.

12. OTHER

Nothing was discussed under this item.

13. REVIEW AND ADOPT REPORT

This Report was circulated to all IWC Commissioners and Contracting Governments on 3 April 2014 and will be presented to IWC/65 in September 2014.

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Annex A

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Annex B

Agenda

1. Introduction
2. Appointment of Chair and Rapporteur
3. Review and Adopt Agenda
4. Review available documents
5. Overview of existing decisions, actions and obstacles, scene setting
6. Current rapid killing and euthanasia techniques (beached cetaceans)
   - 6.1 Review relevant information from IWC - Maui Workshop
   - 6.2 Chemical euthanasia
     - 6.2.1 Sedatives
     - 6.2.2 Lethal chemicals
     - 6.2.3 Injection techniques/equipment
     - 6.2.4 Examples
     - 6.2.5 Safety
   - 6.3 Physical euthanasia
     - 6.3.1 Ballistics
       - 6.3.1.1 Types and calibre of rifles
       - 6.3.1.2 Procedures
       - 6.3.1.3 Variables and constraints (animal size, position, location in surf/land, etc.)
       - 6.3.1.4 Examples
       - 6.3.1.5 Safety
     - 6.3.2 Explosives
       - 6.3.2.1 Types of explosives, examples of procedure
         - 6.3.2.1.1 Australia
         - 6.3.2.1.2 South Africa
       - 6.3.2.2 Safety and other constraints
   - 6.4 Relevant whaling tools and techniques
     - 6.4.1 Exsanguination
     - 6.4.2 Penthrite grenade
     - 6.4.3 Others
   - 6.5 Other euthanasia and rapid killing techniques
     - 6.5.1 Examples
     - 6.5.2 Safety and other constraints
7. Carcass disposal
   - 7.1 Without chemical
   - 7.2 With chemical
   - 7.3 Sensitive areas (e.g. MPAs, turtle breeding areas and bather safety)
8. Needs and constraints in various environments
   - 8.1 Consideration of responses in mass vs single strandings
   - 8.2 Remoteness
   - 8.3 Lack of training or resources
   - 8.4 Cultural factors
9. Develop decision and recommended technique matrix
   - 9.1 Principles and Guidelines for data needed for decision points
   - 9.2 If decision is to euthanise, Principles and Guidelines for most humane killing
   - 9.3 Recommended Principles and Guidelines for best documentation in order to improve the decision matrix
   - 9.4 Contact list of cetacean euthanasia experts
10. Dissemination of Principles and Guidelines and other materials developed
    - 10.1 Through IWC (web, Stranding coordinators list, entanglement capacity building)
    - 10.2 Links to Governments
    - 10.3 Interfacing with the public
      - 10.3.1 Communicating with marine mammal biologists
      - 10.3.2 Liaison with other interest groups
      - 10.3.3 Media
      - 10.3.4 General public (e.g. key messages, avenues to communicate)
11. Data gaps, promising research and future directions
12. Other
13. Review and adopt Report

Annex C

Example Cetacean Euthanasia Recording Template

Field Number: _____ Species: _____ Date: _____
Length: _____ cm straight/curved. Weight _____ kg actual/estimated.
Euthanising Agency: _____ Initial Report Time: _____ Time of Arrival: _____
Officiating Veterinarian: _____ Lead Responder: _____
Location Description (Circle): Marsh/mudflat, Beach, In surf, Still/shallow water, Bar/shoal, Other _____
Decision to perform euthanasia authorised by: _____ and reason for euthanasia: _____

PRE-EUTHANASIA DATA. Time taken:

Heart rate	_____beats/1 min	**Attitude**	Alert, Lethargic, Non-responsive
Resp. rate; exudate	_____breaths/ ____ min; Y N	**Body position**	Upright, Left side up, Right side up
Resp. character	Strong, Weak, Regular, Irregular, Other	**Eyes** (Open/Closed)	Palpebral reflex: Y/N; Menace reflex: Y/N
Body condition	Robust, Normal, Thin, Emaciated	**Movement**	None, Arch, Fluke, Swim, Tremble, Other
Body temp. (°F, °C)	Skin @ _____ Warm Cool	**Other:** *(describe in comments)* Vocalise, Vomit, Faeces, Urine, Lesions	

Method of Euthanasia: Pre-euthanasia Sedation, Chemical Method, Non-Chemical Method (describe) (Circle all that apply)

AGENT 1. (Agent may be chemical or nonchemical)

Location of animal for administration of Agent 1 (Circle): Water, Shore, Vehicle, Facility, Other

Time of delivery		**Heart rate**	_____/1 min
Agent (drug and conc., or device)		**Resp. rate**	_____breaths / _____ min
Amount/size/type/calibre		**Resp. character**	Strong, Weak, Regular, Irregular
Route (injections)	IM, IV, IP, IH, IC, Other	**Attitude at time of delivery**	Alert, Lethargic, Non-responsive
Delivery site on body			
Response to agent			

AGENT 2.

Time of delivery		**Heart rate**	_____/1 min
Agent (drug and conc., or device)		**Resp. rate**	_____breaths / _____ min
Amount/size/type/calibre		**Resp. character**	Strong, Weak, Regular, Irregular
Route (injections)	IM, IV, IP, IH, IC, Other	**Attitude at time of delivery**	Alert, Lethargic, Non-responsive
Delivery site on body			
Response to agent			

AGENT 3.

Time of delivery		**Heart rate**	_____/1 min
Agent (drug and conc., or device)		**Resp. rate**	_____breaths / _____ min
Amount/size/type/calibre		**Resp. character**	Strong, Weak, Regular, Irregular
Route (injections)	IM, IV, IP, IH, IC, Other	**Attitude at time of delivery**	Alert, Lethargic, Non-responsive
Delivery site on body			
Response to agent			

AGENT 4.

Time of delivery		**Heart rate**	_____/1 min
Agent (drug and conc., or device)		**Resp. rate**	_____breaths / _____ min
Amount/size/type/calibre		**Resp. character**	Strong, Weak, Regular, Irregular
Route (injections)	IM, IV, IP, IH, IC, Other	**Attitude at time of delivery**	Alert, Lethargic, Non-responsive
Delivery site on body			
Response to agent			

Use additional data sheets if needed for further comments or if more than 4 agents were used

POST EUTHANASIA DATA:

Time of death		**Carcass necropsied**	Y/N
How determined		**Carcass disposal method**	Bury, Landfill, Render, Other

Comments/Diagrams/Photos:
On a scale of 1-5, how do you assess this euthanasia event? very poorly 1 2 3 4 5 very well
Circle any areas where problems occurred, and elaborate here or on separate page:

- Personnel/public safety
- Animal response/behaviour
- Drug/tool availability
- Disposal
- Media/public response
- Other (explain)

INSTRUCTIONS FOR COMPLETING THE CETACEAN EUTHANASIA RECORD

Overview

This form is modified from Barco *et al.* (2012)[3]

The form has been adapted to accommodate both regions where chemical means of euthanasia are more prevalent, and regions where physical means are more widely used. It has also been somewhat simplified to facilitate field use. It was developed during the IWC Workshop on Euthanasia Protocols to Optimise Welfare Concerns for Stranded Cetaceans, held in London 11-13 September 2013, with input from an international panel of cetacean stranding responders. This form may be used directly, or as a model for developing region-specific forms, to encourage collection of pertinent data surrounding cetacean stranding events that can be used to improve procedures, protocols, and methods for reducing animal suffering when euthanasia is selected as the best course of action.

IDENTIFICATION SECTION

Field Number
Unique identifying number originally assigned to the animal by responder/responding organisation.

Species
Genus and species and/or common name of animal.

Date
Date that the euthanasia was performed.

Euthanising Agency
Name of the lead Stranding Organisation or agency performing the euthanasia.

Initial Report Time
Time of the earliest known report of the animal to the responding agency.

Time of Arrival
Time of arrival on scene by the responding agency.

Officiating Veterinarian
Name of veterinarian performing or consulting on the euthanasia.

Lead Responder
Name of authorised person supervising the event. This will generally be the lead on-site representative of the responding agency.

Location Description
Circle the most accurate description of the stranding location.

Use **Comments** section and extra pages to expand on any section requiring further explanation.

Decision to perform euthanasia authorised by _____ and reason for euthanasia _____
Enter the name of the individual and regulatory authority who authorised the euthanasia, and document factors that lead to the euthanasia decision (example: severe, injury, species, size, age, logistics, etc.)

[3]Barco, S.G., Walton, W.J., Harms, C.A., George, R.H., D'Eri, L.R. and Swingle, W.M. 2012. Collaborative development of recommendations for euthanasia of stranded cetaceans. Final report to NOAA/NMFS for John H. Prescott Award #NA09NMF4390212. *VAQF Scientific Report* 2012-06. Virginia Beach, VA. 183pp.

PRE-EUTHANASIA DATA SECTION

Pre-euthanasia data time taken
Record the time of initial examination.

Heart rate
Record the number of heart beats in 1 minute as determined by palpation, auscultation, or ECG.

Resp. rate; exudate
(Respiratory rate: respiratory exudate): record the number of breaths per unit time (usually 3-5 minutes). Circle Y if respiratory exudate is observed around the blowhole and write description in comments section (example: clear, foam, blood; circle N if no respiratory exudate is observed.

Resp. character
(Respiratory character): the quality, depth, ease of breaths. Circle the most accurate descriptions regarding strength and regularity:

- *Strong*: normal forceful breaths, brisk opening and closing of blowhole.
- *Weak*: depressed or shallow respirations, sluggish opening and closing of blowhole.
- *Regular*: normal breathing pattern.
- *Irregular*: abnormal breathing pattern (example: periods of tachypnea).
- *Other*: abnormal sounds, open blowhole, etc.

Body condition
Circle most accurate description of the animal's nutritional status.

- *Robust*: appears heavy and healthy.
- *Normal*: appears lean but healthy.
- *Thin*: appears overly lean but not with severe bony prominences.
- *Emaciated*: bony prominences evident, markedly concave epaxial musculature, prominent neck depression, ribs obvious.

Body temp.
If actual body temperature measured, record degrees Fahrenheit or Celsius.

Skin @ _____
Describe anatomical location used to assess skin temperature: circle Warm or Cool to touch

Attitude
The animals behaviour/activity (or lack therof). Circle the most accurate description:

- *Alert*: animal is alert and aware: follows movement with eyes.
- *Lethargic*: animal is sluggish or inactive, eyes closed, little reaction to touch/sound.
- *Non-responsive*: animal does not react to stimuli.

Body position
The position of the animal's body upon initial discovery. Circle the most accurate description:

- *Upright*: laying on ventrum, ventral recumbency.
- *Left side up*: laying on right side, right lateral recumbency.
- *Right side up*: laying on left side: left lateral recumbency.

Eyes (open/closed)
Circle one that is most appropriate.

Palpebral reflex
Eyelids close/blink when gently touched at the medial or lateral canthus (corner) of the animal's eye. Circle Y if response present, N if no response.

Menace reflex
Eyelids close/blink when finger or hand is abruptly moved towards the animal's open eye. Circle Y if response present, N if no response.

Movement
Circle all appropriate observations:
- *None*: no movement observed.
- *Arch*: head and flukes bowing or curving dorsally, simultaneously.
- *Fluke*: flukes fluttering or slapping.
- *Swim*: rhythmic moving of body as if swimming in water.
- *Tremble*: shivering or quivering.
- *Other*: if other movements observed (example: seizures, lateral flexing), circle 'other' and describe in comments section.

Other
Circle any other observations and describe in comments section.

METHOD OF EUTHANASIA

Circle all that apply
Pre-euthanasia sedation
Circle if chemical agent(s) administered to the animal prior to euthanasia, including tranquilisers, sedatives, hypnotics, analgesics and/or anesthetics (examples: midazolam, diazepam, acepromazine, ketamine, tiletamine-zolazepam, xylazine, medetomidine, meperidine).

Chemical method
Circle if chemical agent(s) administered to euthanise the animal.

Non-chemical method
Circle if euthanasia method included the use of non-chemical methods, and describe (examples: ballistics including type of firearm and ammunition used, cranial implosion including munitions used, exsanguination including type of equipment used and anatomical location).

AGENT # SECTIONS

'Agent' may refer either to chemical or physical means of euthanasia. Four agent boxes are provided. Use additional data sheets as needed.

Location of animal during administration of Agent #1
Circle most appropriate answer. If this changes, write in for subsequent agents.

Time of admin. (administration)
Record the time that the agent was administered.

Drug and conc. (concentration) or device
For chemical sedation or euthanasia, record the name of the drug and its concentration; for physical euthanasia, record the device used.

Amount/size/type/caliber
For chemical sedation or euthanasia, record the volume of drug used; for physical euthanasia, record pertinent details fully describing the device used.

Route (injections)
For injections, circle the most appropriate answer(s):
- IM (intramuscular): into the muscle.
- IV (intravenous): into the vein.
- IP (intraperitoneal): into the peritoneal cavity.
- IH (intrahepatic): into the liver.
- IC (intracardiac): into the heart or great vessels in direct proximity to heart.

Delivery site on body
Describe the body position where injection, gunshot, implosion, lance or knife was applied.

Response to agent
Did the animal respond to agent or not? And if so, describe how (example: animal becomes more sedate/agitated, heart rate or respiratory rate increase or decrease), and approximately over what time course the changes occurred.

Heart rate, Respiratory rate, Respiratory character, and Attitude at time of delivery: as described above for Pre-euthanasia Section.

POST-EUTHANASIA DATA SECTION

Time of death
Record time that the animal was presumed deceased.

How determined
Record method(s) used to determine death of the animal (examples: no heart beat detected by palpation, auscultation, ECG, or movement of needle used to deliver IC drugs; no respirations for a specified period of time, no palpebral reflex, total loss of responsiveness, rigor mortis, etc.).

Carcass necropsied
Circle Y if animal was necropsied, N if carcass was not necropsied.

Carcass disposal method
Circle appropriate response:
- *Bury*: carcass placed in ground and covered.
- *Landfill*: carcass taken to landfill.
- *Render*: carcass melted down by rendering facility.
- *Other*: examples: sunk, towed, incinerated, chemically dissolved, composted, etc.

COMMENTS AND OBSERVATIONS SECTION

Indicate, on a scale of 1 to 5 with 1 being worst case and 5 being best case, how the euthanasia proceeded.

From the list provided, check any areas where you had concerns about the event, and elaborate in the comment area.

Also use this section or additional pages to document details and/or explanations regarding the event that may not be captured in other documents. Information may include:
- weather or other environmental conditions;
- comments on the outcome of the event;
- details and/or a timeline of reactions to specific agents;
- safety issues; or
- other personnel observations or comments.

Report of the Joint IWC-SPAW Workshop to Address Collisions Between Marine Mammals and Ships with a Focus on the Wider Caribbean

18-20 June 2014, Gamboa, Panama

Report of the Joint IWC-SPAW Workshop to Address Collisions Between Marine Mammals and Ships with a Focus on the Wider Caribbean[1]

The Workshop was held from 18-20 June 2014 at the Gamboa Rainforest Resort at the Panama Canal. A list of participants is provided at Annex A.

1. INTRODUCTORY ITEMS

1.1 Welcome from the Republic of Panama

Yasmin Brea (IWC Commissioner for the Republic of Panama) opened the Workshop. She welcomed participants to Panama and thanked ARAP (Autoridad de los Recursos Acuáticos de Panamá), the Smithsonian Research Institute and the Panama Canal Authority for their assistance and support in planning the Workshop.

Panama has a strong commitment to the protection and conservation of whales and has declared its national waters as a sanctuary for all species of cetaceans. Recently Panama proposed and had accepted a Traffic Separation Scheme (TSS) to the International Maritime Organization (IMO), to reduce the risk of cetacean collisions in the approaches to the Panama Canal. In addition, Panama had recently conducted technical training on responding to entangled whales.

Brea repeated Panama's support for cetacean conservation and hoped that all participants would find that the Workshop provided a valuable opportunity to further develop policy and cooperation.

1.2 Welcome from the IWC

Frederic Chemay (Chair of the IWC's Ship Strike Working Group and IWC vice-Chair) reminded participants that a proposal for a joint Workshop between the IWC and UNEP-CEP-SPAW was submitted to the IWC's 64th meeting in Panama in July 2012 by the Governments of Panama, Dominican Republic, France, Mexico, Netherlands and the USA. He recalled that an important component of the Workshop's objectives was to assess the extent of ship strikes within the Caribbean Region and evaluate the potential for mitigation while recognising that there is no universal solution to the problem.

Chemay highlighted the opportunity to identify data gaps at global and regional levels. This would require better communications with shipping companies and increased reporting of events via regional initiatives and especially to the IWC's global Ship Strikes Database. He made a call for increased efforts in this regard within the Caribbean area.

The Workshop, and two previous recent collaborations on entanglement response training, indicated an increased working relationship between IWC and UNEP-CEP-SPAW. This work had the common theme of reducing human impacts on cetacean populations, and he noted that the recommendations from the Workshop would be reported to the IWC's next Plenary meeting in September 2014.

Chemay thanked the Government of the Republic of Panama for hosting the Workshop and acknowledged the organisational support provided by the IWC Secretariat, the UNEP-SPAW team and the members of the Steering Committee. He particularly thanked the Governments of the USA, the Netherlands, and UNEP-SPAW who had made voluntary contributions to the cost of the Workshop.

[1]Presented to the IWC Conservation Committee meeting as IWC/65/CCRep01.

1.3 Welcome from the Caribbean Environment Program's Protocol on Specially Protected Areas and Wildlife (SPAW)

Sandra Jean (SPAW Programme Officer) welcomed participants on behalf of UNEP-CEP and of the SPAW-RAC. She thanked the hosts of the Workshop and the participants and noted that collisions between ships and cetaceans are an issue all around the world and also in the wider Caribbean region, and that this is an important issue to discuss. She described the SPAW Protocol and noted that the 16 Contracting Parties had established a marine mammal action plan in 2008 (UNEP, 2008). The recent collaborative work with the IWC to reduce human impacts on cetaceans in the Caribbean Region contributed to the objectives of the plan by providing technical training and policy development. She thanked the organisers and co-sponsors of the Workshop and wished everyone a productive meeting.

2. CHAIR AND RAPPORTEUR(S)

2.1 Appointment of Chair

Lorenzo Rojas-Bracho was elected Chair of the Workshop.

2.2 Appointment of Rapporteurs

Cooke, Brockington and Mattila were appointed as rapporteurs, with assistance from Donovan and others as appropriate.

3. REVIEW AND ADOPT AGENDA

The adopted Agenda is given as Annex B.

4. BACKGROUND AND CONTEXT

Chemay noted that although management of whaling was the traditional role of the IWC, a number of new or emerging risks had developed which were relevant to whale conservation, one of which was ship strikes. Ship strikes are a complex issue because:

- they involve multiple species;
- they involve a wide variety of shipping industries;
- it is a worldwide issue with wide political/financial considerations;
- there may be conflicting priorities across responsible organisations; and
- the issue needs both international and national regulation.

The complexity of the issue is further increased because ship strikes are generally under-reported. In addition, there are different perspectives for prioritising action on ship strikes, and these include *inter alia*: (1) a conservation perspective, in regions where ship strikes may reduce species or population recovery; (2) a welfare concern which arises because of the injuries caused by collisions; (3) a human safety concern arising especially where smaller vessels traveling at high speed are involved; (4) a necessity arising out of public perception to take all measures to reduce strikes; and (5) an economic need to prevent damage to vessels.

Within the IWC, ship strike issues are addressed through the Conservation Committee's Ship Strike Working Group (SSWG), whose membership comprises Argentina, Australia,

Belgium (Chair), Brazil, Denmark, France, Germany, Italy, Republic of Korea, Luxemburg, New Zealand, Portugal, South Africa, Spain, UK, USA and UNEP/CMS. The SSWG delivers regular progress reports to the Commission covering key items including work plans, updates on collaboration with other organisations and progress with the IWC's global ship strikes database.

An important milestone for the SSWG was a joint Workshop held by IWC and ACCOBAMS in Beaulieu-sur-Mer (France) in September 2010 (IWC, 2011). This Workshop made several recommendations (see Item 5.1 below, and Annex E) and particularly requested IWC Contracting Governments and relevant maritime sector bodies to continue reporting ship strikes to the IWC Secretariat on a regular basis to allow further development of the IWC ship strikes database.

At the present time, the SSWG is developing a five-year strategic plan to guide its future work, which is being undertaken in close association with IWC Scientific Committee's work on human-induced mortality. Since 2012, the Scientific Committee has provided support to two ship strike co-ordinators who have continued work on the global ship strike database and are assisting with the drafting of the five-year plan.

5. SUMMARY OF CURRENT INFORMATION AND DATA GAPS

5.1 Global

5.1.1 Lessons from the 2010 Joint IWC/ACCOBAMS Workshop

Donovan briefly summarised the generic lessons that arose from the 2010 joint IWC/ACCOBAMS Workshop in Beaulieu-Sur-Mer, France (hereafter referred to as the Beaulieu Workshop, IWC, 2011) and how these were related to recommendations. In addition, a full summary of the detailed recommendations can be found in Government of Belgium (2011), which was presented to the IWC Commission meeting in Jersey, IWC/63.

The Workshop had recognised the variety of reasons that the IWC and ACCOBAMS (Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area) were interested in this issue ranging from animal welfare and human safety through to population level threats. These different perspectives can lead to different approaches to the issue and assignment of priorities. There are an increasing number of reports of ship strikes although as the Workshop noted it was not clear whether this related to a true increased incidence, an increase in reporting effort or a combination of both. The focus of the Beaulieu Workshop was on information needs to assess whether ship strikes represented population level threats with a focus on the ACCOBAMS area, and an initial consideration of mitigation measures. In looking at population level threats it was recognised that ship strike mortality was one component of examining cumulative effects upon populations.

The issue of ship strikes is complex both from a scientific and a management context. It often involves multispecies consideration from a cetacean perspective and a wide variety of vessel types and categories including industrial, artisanal, whalewatching, transport, leisure and military. This variety and the various political and economic interests involved also presents difficulties with respect to appropriate management bodies and international and national regulatory responsibilities. The Workshop recognised that this was an issue that could not be addressed by the IWC alone.

An important component of the Workshop focussed on what types of data were necessary to determine the extent of ship strikes, in order to assess its significance as a population level problem. With respect to data on ship strikes themselves, there was a great need for good quantitative and even qualitative information. There is often considerable uncertainty in obtaining this information which sometimes comes as a result of direct visual information, but often comes from systematic and *ad hoc* post-mortems. Recommendations from the Workshop focussed on the need for developing agreed protocols for post-mortems (subsequently reviewed and agreed to at IWC SC/65a; see IWC, 2014a), the importance of training/capacity building with respect to stranding networks and development of a tiered and pragmatic approach by region that recognises available expertise and resources. A major focus was on how to expand and publicise the newly developed IWC global ship strikes database.

The Workshop noted that the data required for both cetaceans and ships were similar in many ways. They included information on: abundance and trends; temporal and spatial distribution at appropriate scales and an understanding of predictability; susceptibility by species or vessel type; the behaviour of animals and vessels (night, speed, etc.). In all of this, appropriate handling of the often inevitable uncertainty is essential. Recommendations from the Workshop focussed on obtaining the necessary baseline and monitoring cetacean data at the appropriate spatial and temporal scales, and collaboration with the various shipping sectors and authorities to obtain the necessary shipping information.

Once such data are available, then modelling/GIS approaches are necessary to produce integrated analyses which are important *inter alia* to evaluate and prioritise threats, as well as to assist in the development and evaluation of mitigation measures. Given the uncertainties, the process is likely to be complex and iterative, even for relatively data rich areas.

The questions surrounding determination of priorities were discussed at the Workshop, where it was recognised that a number of criteria are possible, depending on stakeholder perspectives and data available. These include: cetacean population status in light of quantified threats, qualitative evaluation based on an overview of available data; the feasibility of effective mitigation actions; economics; animal welfare, etc. Once priority species/regions/populations are agreed, then this may lead to further research to better quantify the problem or develop mitigation actions or implement mitigation actions themselves. The Beaulieu Workshop highlighted a number of potential priority areas within the ACCOBAMS region.

In examining questions of mitigation methods, the Workshop stressed the need to involve all stakeholders (e.g. industry, IMO, ports, national and international authorities, technologists, cetacean scientists, etc.) at all stages and the importance of collaboration. The Workshop emphasised that local conditions and resources must be taken into account. Where there are economic or legal implications for mitigation, then the need for mitigation and the likely effectiveness of the methods themselves require a strong scientific basis and evaluation. Monitoring effectiveness of proposed 'solutions' is essential. The Workshop considered a number of approaches (annex E of the Beaulieu Workshop report summarises these) that can broadly be classified as those that 'keep apart' cetaceans and ships (e.g. shipping lanes, MPAs), those that aim to 'minimise' encounters (e.g. observers, technology) or their effects (e.g. speed restrictions).

A summary of the Beaulieu recommendations and proposed actions is provided as Annex E.

5.1.2 The IWC Global Ship Strikes Database and the need for improved identification and reporting of ship strikes

Ritter introduced the IWC's global ship strikes database[2] detailing its development, structure, the layout of the online reporting tool and the categories of information that can be reported. Details can be entered into the database of incidents/collisions, the cetacean species involved, the impact upon or fate of the animal as well as the vessel's identity, type and speed, etc. He gave an overview of the current records contained in the database (over 1,100 individual reports) and summarised their geographical distribution especially relating to the North Atlantic including the Caribbean Sea. Data gaps were acknowledged, and these included an absence of data on vessel type and speed for many strikes. Ritter emphasised that the information held in the database related to reporting effort rather than representing an accurate reflection of the global situation. He also drew attention to the ongoing work of the IWC's Data Review Group in verifying records.

In discussion, the Workshop noted that the relative abundance of records in the database was as much a result of differential effort and reporting as to true relative occurrence. For example, the large number of North Atlantic right whale records reflected the substantial effort along the US east coast and the efficiency of the reporting systems in that area.

Given the patchy reporting and effort thus far (although this is improving), the Workshop **agrees** that at present it is not appropriate to use the database records to make initial estimates of the global extent of the ship strike issue. In general, the Workshop **agrees** that ship strikes are more likely to be an important factor at a population level for species and populations where abundance is low (e.g. western North Atlantic right whales, eastern North Pacific right whales, southeastern Pacific right whales, Arabian Sea humpback whales, western gray whales, blue whales off Sri Lanka, sperm whales in the Canary Islands and fin whales in the Mediterranean Sea). Once populated more fully, the database will also be valuable in highlighting areas where concentrations of strikes occur that may be important for more abundant populations, as well as highlighting important general areas on which to focus mitigation efforts.

The Workshop briefly discussed alternate approaches to estimating the extent of ship strikes including examination of scarring from non-fatal collisions and the use of photo-identification records to estimate extent of non-age related mortality. It noted the inherent difficulties in such approaches and noted that this issue remains on the agenda of the Scientific Committee.

In summary, the Workshop **recognises** ongoing effort to populate the database and the work of the IWC ship strikes database co-ordinators. Here (and elsewhere in the report), the Workshop **stressed** that improved efforts to encourage reporting was of highest priority.

The Workshop noted the great importance of improved reporting. With respect to the IWC, the Workshop **strongly recommends** that:

(1) IWC member countries place greater emphasis on publicising the database and the need to report ship strike data directly into it within their countries, including within their relevant government departments (including the navy and coast guard) and to local maritime users in general;
(2) IWC member countries submit relevant information to the Scientific Committee, e.g. in National Progress Reports;
(3) the IWC continues to fund the ship strikes database co-ordinators and that the co-ordinators continue to *inter alia* publicise the database; and
(4) the IWC increase efforts to publicise the database to other intergovernmental and regional organisations, as well as all parts of the maritime sector.

5.1.3 Identifying data gaps

The Workshop noted in addition to the need to encourage reporting (see Item 5.1.2 above) that ship strikes were likely to be greatly under-reported in most parts of the world for a variety of reasons including effort and resources available to stranding networks, difficulties in detection at the time (especially for large vessels where impact might not be noticed) and difficulties associated with either lost carcasses or determining cause of death even if the carcase is discovered. With respect to mitigation measures in particular, the Workshop **stresses** that obtaining information on ship strikes where vessel type and speed can be identified is extremely valuable; as part of the increased efforts to publicise the database to the marine sector (see Item 5.1.2 above), this should be emphasised. In this regard it is also important that mariners are informed that reporting a ship strike is a positive action aimed at enabling future mitigation, rather than something that will have negative implications for them or their company.

The Workshop also **noted** that there is a lack of information on the behaviour of whales around vessels; such information is of great value to the development of mitigation measures and the Workshop **recommends** increased studies of data on how whales respond to ships (and see the recommendation relating to the use of telemetry under Item 8).

5.1.4 Shipping and other stakeholder perspective

5.1.4.1 CRUISE INDUSTRY PERSPECTIVE

Griffiths summarised the state of the global cruise industry, including the organisation of the Cruise Lines International Association (CLIA) global secretariat and CLIA advisory committees. CLIA is comprised of more than 60 member cruise line companies, of which more than 40 are oceangoing members who operate more than 200 ships and representing approximately 98% of the global cruise capacity. While average growth of the global cruise industry in terms of gross tonnage (GT) has increased over time, it was noted that this trend is expected to level off in the coming years based on new ship orders up to a maximum of approximately 150,000 GT. Similarly, the maximum number of passengers and crew will also level off in the years to come. Finally, while Asia is the fastest growing market for the cruise industry, it was noted that the Caribbean region remains the highest global market share at 37.3% in terms of cruise ship itineraries and capacity.

CLIA is the world's largest cruise industry trade association with representation in North and South America, Europe, Asia and Australasia. It represents the interests of cruise lines, travel agents, port authorities and various industry business partners before regulatory and legislative policy makers. It is also engaged in travel agent training, research and marketing communications to promote the value and desirability of cruise holiday vacations with thousands of travel agency and travel agent members. CLIA's Associate Member and Executive Partner programme includes the industry's leading providers of supplies and services that

[2]Accessible through *http://iwc.int/ship-strikes.*

help cruise lines provide a safe, environmentally friendly and enjoyable holiday vacation experience for millions of passengers every year.

Within the Caribbean region there are around 8,500 port calls per year and this figure is indicative of the number of passages made within the region, with transits often being made at night. Use of AIS tracking, and data obtained through the website *http://www.marinetraffic.com* indicate the types of routes being used for transit (see Annex D). However the Workshop noted the paucity of empirical data on cetacean distribution in the region, which would be necessary for quantifying risk of ship strike (see Item 5.2.4).

The Workshop discussed the level of awareness amongst cruise line operators for reporting ship strikes and noted that it was low. Previously a CD-ROM had been developed by Holland-America Line which gives training on how to report ship strikes. CLIA offered to facilitate engagement with operators and noted that the International Chamber of Shipping would also help facilitate awareness raising. This is also relevant to efforts to improve reporting discussed under Item 5.1.2.

5.1.5 High risk areas and species

5.1.5.1 MODELLING APPROACHES INCLUDING SHIPPING AND WHALE DATA WITH GLOBAL IMPLICATIONS OR APPLICABILITY

The methodology used by Redfern *et al.* (2013) to assess the risk of ships striking large whales contains three components: developing habitat models to predict whale densities, identifying management options using shipping data, and assessing risk in the identified options. Previous estimates of marine mammal abundance (e.g. stratified density estimates) were available at spatial scales that were typically much larger than the scale of human activities. To provide finer-scale estimates of species densities, researchers at NOAA Fisheries' Southwest Fisheries Science Center developed habitat models for 22 species or species groups using 15 cetacean and ecosystem assessment surveys conducted in the eastern Pacific Ocean between 1986 and 2006 (Barlow *et al.*, 2009; Forney *et al.*, 2012). During the development of these models, many methodological aspects of habitat modelling were investigated: modelling frameworks, data sources, error structures, model selection, spatial and temporal resolutions of input variables, and spatial interpolation techniques. Generalised additive models were used to relate species encounter rate and group size to bathymetry, distance to shore or selected isobaths, sea surface temperature, variance in sea surface temperature, salinity, chlorophyll, and mixed-layer depth. Model selection was performed using cross-validation on novel data. Smoothed maps of species density were created from the final models and are available with associated standard errors and 90% confidence intervals for the California Current ecosystem and eastern tropical Pacific. Redfern noted that current work is being conducted to further refine these models for large whale species.

Redfern *et al.* (2013) used fine-scale, systematic survey data to develop habitat models for humpback, blue and fin whales in the Southern California Bight, off the US west coast. Automatic Identification System (AIS) data collected between 15 September and 30 November in 2008 and 2009 was used to analyse traffic patterns for large commercial ships. From these traffic patterns, they derived four alternative shipping lanes. Ship-strike risk for the alternative shipping lanes was assumed to be proportional to the number of whales predicted by the models to occur within each lane. The proportion of whales within a shipping lane that will be struck is a function of whale densities, volume of shipping traffic, ship speed, and whale behaviour. Information is lacking on the functional form of these relations and other factors that may affect ship-strike risk. Consequently, they quantified the co-occurrence of whales and shipping traffic as has been done in recent ship-strike studies (Vanderlaan *et al.*, 2009). They found that the lane with the lowest risk for humpback whales had the highest risk for fin whales and *vice versa*. Risk to both species may be ameliorated by creating a new lane south of the northern Channel Islands and spreading traffic between this new lane and the existing lane in the Santa Barbara Channel.

Redfern reported that she and her colleagues are expanding the application of this methodology to assess ship-strike risk in numerous regions. For example, systematic survey data collected by NOAA fisheries' Southwest Fisheries Science Center and non-systematic survey data contributed by numerous individuals are being used to improve whale-habitat models and assess risk off the entire US west coast and throughout the Eastern Tropical Pacific. Blue whale habitat models developed for the US west coast are being used to predict blue whale distributions in data poor regions, including Sri Lanka and Chile. Predictions will be validated using all available systematic and non-systematic data from these regions. The predictions will be used to assess ship-strike risk and prioritise future data collection efforts in these regions.

The Workshop welcomed this paper, noting that it was based on an extremely good long-term dataset, probably the best in the world. It also noted that in an ideal case, a full risk assessment involves consideration of additional issues including whale behaviour (e.g. time at surface), and changes in seasons and changing environmental factors (e.g. El Niño). Lessons and conclusions about the value of modelling and the strengths and weaknesses of different approaches are discussed under Item 7.2.4.

The Workshop considered Priyadarshana *et al.* (2014) that reported on risk assessment work undertaken in Sri Lanka (Sri Lanka is not an IWC member). Surveys were conducted from February to April 2014 to investigate the distribution patterns of blue whales in relation to existing shipping lanes and further offshore. The highest densities of blue whales were observed in the current shipping lanes. These high densities of whales combined with one of the busiest shipping routes in the world suggest a severe risk of ship strikes. The authors concluded that the results suggested that blue whale distribution in the area is related to bathymetry and thus that the observed distribution patterns may be consistent over time. Hence moving the current Traffic Separation Scheme (TSS) further offshore would likely substantially reduce risk of collisions with blue whales. However, doing so may increase the risk of collisions with sperm whales. Two were struck last year, one of which stranded while the other did not. The IWC Scientific Committee reviewed this paper in May 2014 and had agreed that further surveys of blue whale distribution in the area at different times of year would provide important data to inform recommendations on mitigation measures including moving shipping lanes. Noting that there has been a dialogue between the IWC and the Government of Sri Lanka on the issue, the Committee had recommended that the IWC should begin to discuss possible mitigation measures with the relevant authorities and stakeholders in the area. The Committee had requested that the Secretariat send a letter to the Sri Lankan Government, with an update on the information from its discussion of this topic and ways in which the Committee or the IWC Ship Strikes Working

Group may assist. In addition, it had recommended that a representative from Sri Lanka be invited to relevant IWC meetings and workshops. A representative from Sri Lanka was invited to the present Workshop but the representative was unfortunately unable to attend. The Workshop **endorses** the Scientific Committee's recommendations.

The Workshop also considered Frantzis *et al.* (2014) concerning the situation for the Hellenic Trench southwest of Greece, an area that had been identified as potentially high risk during the Beaulieu Workshop (IWC, 2011). An analysis of twelve seasons of visual and acoustic observations of sperm whales identified high risk areas where whales were exposed to very high shipping densities. There is evidence of high numbers of ship strikes from strandings data. The potential for small changes in shipping routes to greatly reduce risk in these high risk areas suggested considerable scope for effective mitigation. However, it is important to investigate whether moving the routes offshore might affect other species, especially fin whales, before recommending any changes. The Workshop **endorses** the Scientific Committee's recommendation that the IWC should encourage dialogue with shipping regulators and interests in the area, perhaps in conjunction with ACCOBAMS.

The Workshop then considered Vaes and Druon (2013) which modelled the seasonal ship strike risk of fin whales in the western Mediterranean Sea by making use of data on vessel traffic from AIS data (for May, July and October) and hypothesised 'potential fin whale habitat' modelled using fin whale sightings and satellite-derived data, sea surface temperature and chlorophyll-*a* content. This 'potential habitat' was then extrapolated to the entire western Mediterranean Sea. The authors estimated mean risk per month from daily risk estimates. AIS data were available for May, July and October. Two high risk areas were identified to have an especially high collision risk for fin whales: (a) the Liguro-Provencal Basin north of Corsica (including the Pelagos Cetacean Sanctuary); and (b) the Alboran Sea with an even higher potential risk. The first area was already known as a potential high risk area whereas fin whales are rarely observed in the latter area. Near-realtime maps of 'potential fin whale habitat' have been computed on a daily basis since 2010 and provided to partner research groups. The Scientific Committee had expressed a number of reservations about this approach in 2013 (IWC, 2014) including over-interpretation of limited data and extrapolation. The Workshop **echoed** these concerns and refers to its general conclusions and recommendations below.

5.1.5.2 CONCLUSIONS AND RECOMMENDATIONS

Risk assessments require *inter alia* quantitative representations of species distributions/relative density at appropriate temporal and spatial scales. Species distribution modelling and predictions from these models can be a powerful tool for meeting this requirement, but several issues require careful consideration. Of primary importance is the nature and quantity of data available and the area in which data were collected. Marine mammal distributions are highly dynamic and variable. Consequently, the likelihood that predicted distributions capture areas of consistently high density and the uncertainty inherent in the species distribution will generally increase with the number of seasons and years of data available for model building. In particular, longer data time series will capture a greater range of temporal habitat variability (e.g. the El Niño Southern Oscillation, ENSO). The spatial extent of the available data has a similar effect. If sampling is limited by logistical constraints to only a small or atypical portion of the range of the animals (e.g. to areas close to the coast, major cities, etc.) and/or only one or two seasons, predictions from the model may well be misleading and inappropriate as a basis for identifying potential or actual important areas for cetaceans and/or high risk areas when combined with information on threats (e.g. AIS data). This potential bias can be a particularly important consideration when using presence-only data alone (e.g. sightings from whalewatching operations).

In addition, when developing appropriate statistical models, many decisions must be made, including selecting the modelling framework, data sources for the habitat variables (e.g. *in situ*, remotely sensed, or modelled) and their spatial and temporal resolutions, error structure, variable selection techniques, and spatial interpolation (and in certain cases extrapolation) techniques. Each of these decisions affects the predicted species distributions to a greater or lesser extent. In particular, these decisions can greatly influence the uncertainty in the predictions in addition to the uncertainty associated with the available data. It is, of course, also important to explicitly consider stock structure within the area.

The Workshop **stresses** that it is **essential** that the limitations and uncertainties surrounding density maps obtained from species distribution modelling are explained properly to managers along with the uses to which they can be put. Effectively communicating the uncertainty in the predictions is critical for correctly interpreting estimates of risk. This is particularly important because maps can be produced from poor datasets as simply as they can be produced from adequate datasets; such maps can be extremely misleading and imply a spurious level of reliability.

Notwithstanding the general difficulties associated with extrapolation (*versus* interpolation), the Workshop **recognises** that there are circumstances where extrapolation of spatial/habitat models from data rich areas to data poor areas can be of value in identifying areas of potential importance that warrant further investigation (e.g. by systematic surveys). In this regard, it noted the work on beaked whales undertaken by Cañadas *et al.* (ACCOBAMS document SC7-Doc 15) within the Mediterranean region and the ongoing work of Redfern and colleagues on blue whales found off South America and Sri Lanka reported above. Both studies correctly identified the limitations and the appropriate interpretations of this work.

The Workshop **commends** the work undertaken thus far on one of the best long-term datasets in the world for habitat modelling, i.e. the Eastern Tropical Pacific. It noted the potential of using this dataset to explore certain generic questions including the relationship between reliable predictions and, for example, length of datasets and/or geographical extent of datasets. It **recommends** investigation of these issues by 'censoring' or filtering the datasets in various ways and comparing the reliability of the predictions against those from the full dataset. Similarly, it **recommends** exploration of the relationship between use of presence/absence data and presence-only data.

5.1.5.3 MMPAS AND IUCN-IMMAS

Hoyt reported that in October 2013 at the third international MPA (Marine Protected Areas) conference in France (IMPAC3), the IUCN Marine Mammal Protected Areas Task Force (MMPATF) was launched. This was an initiative of the International Committee on Marine Mammal Protected Areas (ICMMPA) which has focused on MPA and habitat issues with marine mammals. The new task force sits within both the IUCN Species Survival Commission (the cetacean, pinniped and sirenian specialist groups) and the IUCN World Commission on Protected Areas.

The first Task Force action was to convene a workshop at IMPAC3 to look at creating a new category of 'Important Marine Mammal Areas', or IMMAs, to focus more attention on 'important habitats' for whales and other marine mammals. The workshop determined that the starting point criteria for IMMAs in terms of testing should fit within: (1) Convention on Biological Diversity (CBD) Ecologically or Biologically Significant Areas (EBSAs); and (2) IUCN Marine Key Biodiversity Areas (KBAs) (Hoyt and Notarbartolo di Sciara, 2013). But the fine-tuning and possible thresholds need to be determined after testing.

The impetus for creating the IMMAs category was: (1) the widely successful 'Important Bird Areas' (IBAs) concept which has proved an asset in global conservation planning (with some 12,000 IBAs named to date); and (2) the fact that whales and other marine mammals were largely being left out of the CBD EBSA planning process for the high seas. Looking at 168 EBSAs declared before Oct. 2013, only 11% listed marine mammals as a primary feature (EBSA Criteria I, II and III). Only 26 marine mammal species (out of 120) were named within EBSA submissions as either primary or secondary (Criteria VI) features. Only one species, humpback whales, was commonly named; then walrus, beluga, polar bear and bowhead whale were named in a few areas. The other 20 species were named in only 1-5 areas.

Besides marine mammals being left out of the EBSA process, there is no standardised method for presenting evidence of marine mammal occurrence or importance. A standardised IMMA protocol to categorise, collate and advocate evidence is essential for global strategic conservation planning for EBSAs, national and regional MPA networks, and might be helpful in terms of identifying areas to avoid or where guidance is needed in terms of averting ship strikes and addressing noise issues.

To help strengthen the EBSA process and support the incorporation of marine mammal conservation concerns into these processes, the Task Force is organising a series of workshops to map and test draft IMMAs in selected regions of the world's oceans to provide the opportunity for developing and refining subcriteria and thresholds for IMMAs, and to start to put IMMAs on the map, so that ultimately the aim is to start to arrive at a World Directory of IMMAs.

This 'directory', which in time could become a global mapping project for the IMMAs, similar to IBAs and EBSAs, would incorporate information from all the existing spatial resources available, including:

- EBSAs with annotations for primary and secondary features related to large whales;
- OBIS-Seamaps and other databases as starting point indicators;
- marine IBAs, as mapped by BirdLife International in 2013, as well as national programs such as the Biologically Important Areas (BIAs) in the US;
- oceanographic data including SST, seasonal chlorophyll presence, bathymetry to show, e.g. whale feeding areas; and
- MPAs for whales and dolphins.

Out of more than 7,000 MPAs worldwide, some 575 have recognised cetacean habitat (Hoyt, 2011). At the website *http://www.cetaceanhabitat.org*, it is possible to query the database separately for sperm, humpback, blue, fin and right whales. Users should note that these are political designations not necessarily equivalent to the initial 'scientific' proposals. Also, there are 176 proposed MPAs with cetaceans, as of 2011, and these tend to be closer to the scientific proposal for protection. The Task Force, and Whale and Dolphin Conservation (WDC), have assembled the point data to create polygons for most of these areas.

The Task Force is organising a workshop to test the process and to start populating a map of the data rich eastern Australia/New Zealand region, extending into the less data rich South Pacific. The workshop will be held at the Third International Conference on Marine Mammal Protected Areas (ICMMPA3) in Adelaide, Australia in November 2014. The goal is to devise a set of common currencies to qualify each species' spatial distribution, as well as to devise a methodology for the considerable work to come. The goal of IMMAs should be to identify non-political, scientifically based important areas for marine mammals supported by data plus modelling and expert input.

The IMMA identification process has drawn upon its participation in the last 4 EBSA regional workshops for the North Pacific, Arctic, northwest Atlantic and the Mediterranean, and has worked with marine mammal data to create EBSAs with a strong cetacean rationale in each area. As a result, there are several new cetacean draft EBSAs (in which cetaceans are primary features) on the map that are to be approved by the Convention on Biological Diversity's Subsidiary Body on Scientific, Technical and Technological Advice (CBD SBSTTA) this month (June, 2014). The maps should be released shortly. This next set of EBSAs should increase the marine mammal coverage.

Hoyt concluded by noting that for the ship strike issue, it is important look at ship strike criteria, or in effect 'filters', for the EBSAs and IMMAs that will show known areas of the ocean and the large whales resident there including humpback, right, blue and fin whales as well as sperm whales, i.e. the animals most susceptible to being hit by ships.

The nature of the specific advice to the shipping industry that could come out of this approach was discussed. Examples ranged from advising companies that they should avoid MMPAs altogether to advisory notice that extra care should be taken (e.g. reduced speed) in areas where whales are more likely to occur. It was suggested that rather than a 'blanket' approach it would be better to start to work at the regional level (e.g. Australia and the South Pacific where the initial trial approach will be considered at ICMMPA3 in Adelaide in November 2014) and within this region address local areas and work with local stakeholders. Given the known variation in whale distributions from year-to-year in accordance with a range of environmental and ecological factors and the difficulties in precise predictability, the strengths and limitations of the spatial modelling approaches given above (see Item 5.1.5.1), also apply here. It was also recognised that the rationale for MPA boundaries often reflect logistical and political decisions rather than the distribution of animals and so simply suggesting or legislating for measures within MPAs is unlikely to be sufficient to ameliorate ship strikes at a population level.

Recommendations regarding this topic are given under Item 7.1.3.

5.1.6 Other

Ritter (2012) deals with collisions of sailing vessels with cetaceans worldwide, representing the first quantification of this kind on a global basis (Ritter, 2012). To receive reports about collisions and near miss events, web searches were carried out and a dedicated online survey (*http://www.noonsite.com*) was set up. The survey included questions about features of a collision or near miss event, which were selected in accordance with the existing IWC ship strike

database. A total of 111 collisions and 57 near misses were identified, spanning from 1966 until 2010. Seventy-five percent of incidents occurred in the period from 2003-10, indicating a substantial increase during recent years (although the extent to which this is a true rate of increase, or a result of increased reporting or greater difficulty in finding earlier data is unknown). Collisions and near misses occurred on all oceans, often during ocean races and regattas, and were most frequent in the North Atlantic, probably reflecting the relatively large amount of sailing traffic here. Vessel type and speed as well as circumstances of the incident varied widely, but most frequently monohulls of 10-15m size were involved, predominantly sailing at speeds between 5 and 10 knots (range 2-25 knots). Multihull vessels also appeared to have an especially high rate of collision reports. The findings suggest that elevated vessel speed contributes to a higher risk of collisions, because 26% of collisions happened at speeds faster than 10 knots despite very few boats sailing at these speeds. Most reports referred to 'large whales' (n=51) as opposed to 'small whales' (n=12) or 'dolphins' (n=4). The species could be identified in 54 cases. The most recognised animals were humpback or sperm whales. Injuries to the whales varied strongly from 'not visible' to 'dead after collision'. During 20 incidents, blood was seen in the water and two cases reportedly resulted in the death of the whale. Sailing crew members were hurt several times, even during collisions occurring at low speeds. Vessels were damaged regularly, including major impairment and seven cases of vessel loss. Conversely, the outcome of a collision (e.g. injury to whale or crew, damage to vessel) was not a direct function of vessel speed. It seems that many whales were not aware of the approaching vessels. Several measures are proposed which can contribute to mitigating the problem, including placing lookouts, speed reduction, avoiding important cetacean habitats, careful planning of regattas and ocean races, thorough reporting as well as educational initiatives to raise awareness.

Further examples of collaboration with vessel operators were discussed. Five years ago it was negotiated that the Volvo Ocean Race, planned to come into Boston through a densely-populated humpback whale marine sanctuary area, could race through the existing shipping lane. Once the organisers were persuaded to collaborate on the issue (which was not in itself an easy task and took considerable time) this became a good example of management and working together with other organisations. Other examples referred to were a cooperation between the Global Ocean Race and the Environmental Investigation Agency (EIA) NGO in 2010 and the recent World Jet Ski Race held in Guadaloupe in March 2014 (which is the peak humpback whale breeding season in the area). The organisers of the Global Ocean Race collaborated with local agencies by using helicopter sighting teams to search for whales to try to ensure there were no whales in the area before the race could begin. However, even with this precaution, a mother-calf pair appeared in the middle of the race area. This illustrates that even with collaborative efforts it is not always possible for mitigation measures aimed at separating whales from vessels to be completely successful.

The Workshop noted the importance of this topic from the perspective of human as well as animal safety. It **encourages** increased efforts from the IWC ship strike co-ordinators and others to inform and collaborate with all maritime users and especially the organisers of sailing races and competitions, of the potential risks of collisions with cetaceans and the need to avoid or take extra precautions in areas likely to contain higher numbers of whales.

5.2 Wider Caribbean Region

5.2.1 Existing information on ship strikes

There are few (around 10) reports from the Wider Caribbean area listed in the IWC Ship Strikes Database from 1961-present.

It was reported that there are some additional reports from Guadaloupe (five strikes), with two documented. Bédel (Agoa MM Sanctuary/French MPA Agency) undertook to send these reports to the database coordinators. There are also potentially two further reports to add to the database from the Dominican Republic. It was also noted that last April there was a 'near miss' documented by a survey vessel where a near collision was observed of a humpback whale with a high-speed fishing vessel which did not slow down. The Workshop noted that small cetaceans are probably involved in collisions with smaller fishing boats, too, as many of the photographs of small cetaceans taken for photo-identification purposes within the region have propeller scars.

In discussion, it was noted that similar data (photo-identification and reports from various vessel captains) are being collected in the Canary Islands. From that experience there is a need to work with the owners of high-speed fishing vessels and fishermen. It was suggested that one approach for the wider Caribbean was to introduce the issue and increase awareness of cetacean ship strikes through the current manatee reintroduction programme, which involves the coastguards.

In conclusion, the Workshop noted that the general awareness of the issue of ship strikes and the IWC database in the Caribbean area is low. Determining the extent of the issue requires greater collaboration with stakeholders including maritime organisations and the Workshop **recommends** that increased efforts are made by the IWC, SPAW and others to raise awareness and encourage reporting to the IWC database as well as any regional databases. This includes encouraging the establishment of strandings networks where these do not exist and the provision of additional information to existing ones.

5.2.2 Shipping and other stakeholder information

Griffiths gave a presentation which summarised the situation with regard to cruise shipping in the Caribbean area. The Caribbean has the biggest market share of cruise ships in the world. There were 8,100 'port calls' in 2013 in an area roughly encompassing the Wider Caribbean. The trend is broadly for more each year, although this is levelling out with the biggest growth expected in Asia. The places with the highest numbers of port calls are the Bahamas (1,600 in four years), Mexico (Yucatan only), and the US Virgin Islands (750). Each individual port call is not necessarily made by a different ship, but is an individual visit by a ship. There are more port calls that could be included in the counts for this area - data for the US ports was not fully available (e.g. Miami is a large port that serves this area but was not included in this data). Peak season for cruise ships in the Caribbean is October-March, which is also peak humpback whale migration season.

AIS information clearly shows heavy passenger routes around the area (this is vessels of 300 tonnes and higher). Quite a few of these are short-distance overnight ferries, which go quite slowly (around 10 knots) for reasons of fuel economy, travelling through the night to arrive at dawn. It may be possible to use the AIS data to find the average speeds of these vessels. The Workshop **agrees** that AIS (or similar data) can be very valuable as part of risk assessment work on ship strikes. It notes that there are a number of commercial websites where such information can be obtained (e.g.

http://www.marine traffic.com). It also notes that care must be taken when using data from commercial sites as it is not always known how the raw data has been processed (i.e. what assumptions have been used) and filtered.

5.2.2.1 PANAMA CANAL AUTHORITY PERSPECTIVE

Jaen indicated that Panama is visited by around 17,000 vessels a year, of which around 14,000 transit the Canal. The number of vessels has remained relatively constant over the last 40 years although the amount of cargo being carried has increased. The market segment during 2013 was 24% dry-bulk, 20% tanker, 7% general cargo, 26% container, 9% refrigerated, 6% vehicle carrier, 2% passenger and 6% others. Dry-bulk, tankers and general cargo (51%) normally have a sea speed of less than 15 knots. Containers, refrigerated, vehicle carriers and passenger ships (43%) normally have a sea speed over 15 knots.

On the Caribbean Sea side of the canal the traffic disperses along four routes: (1) transit to Gulf of Mexico (Yucatan Strait); (2) transit along the east coast of North America (via the Windward Passage); (3) to Europe (via Mona Passage); and (4) to the east coast of South America (north of Colombia).

On the Pacific Ocean side most of the traffic goes across the Gulf of Panama, around the Peninsula de Azuero and south of Coiba National Park. This traffic goes or comes from the Far East and the west coast of North America. The second group crosses the Gulf of Panama coming or going from the west coast of South America. A minor group goes or comes from the southwest Pacific.

Jaen indicated that his experiences of working with mariners suggested there was broad support for Traffic Separation Schemes (TSS). However there was less universal support for speed restrictions as these require extra time from engineer officers to establish the change of speed and shipping companies themselves may not support the extra passage time. The Panama TSS was approved by the International Maritime Organization (IMO) and the Pacific section prescribes a recommendatory speed reduction to 10 knots for four months of the year when whales are most abundant.

The Workshop welcomed this report. The Panama TSS is discussed further under Item 6.2.3.

5.2.3 High risk areas and species

5.2.3.1 CARIBBEAN (LIFE WEB, UNEP-CEP, RAC REMPEITC)

Jean summarised progress on the UNEP LifeWeb programme (LifeWeb Spain, 2014). This is a major ongoing study of human impact on marine ecosystems – maps and charts have been produced showing species richness, species range maps, human activities and the potential impact of these activities on marine mammals. There is an acknowledged lack of data, e.g. bycatch data, in some places, and some maps have been 'extrapolated' from relatively small areas or limited data. Range maps for around 25 species were produced and critical areas for further research were identified. Eventually, after further refinement, this material will be placed on the web. The idea of the LifeWeb report and the accompanying one-day workshop was to find areas to focus further detailed effort on rather than being an end in itself. The maps can be used to identify data gaps which may then suggest areas for further study. Although some people involved in the project were pushing for the creation of MPAs based only on these maps and without any further research, this has not happened. Research in the area is ongoing: recently some cetaceans were tagged and followed. Additional studies will help to refine and develop the dataset.

The strengths and limitations of this study and approach are discussed fully under Items 5.2.4 and 6.2.2. In particular, it was noted that use of range maps based on limited data, extrapolation or expert opinion are not sufficient to identify high risk areas.

5.2.3.2 THE USE OF MODELS: THE ETP EXAMPLE

Félix presented information on the activities of the Permanent Commission for the South Pacific (CPPS) in implementing the Southeast Pacific Marine Mammal Action Plan. This includes training activities with IWC and NOAA, the development of an information system on marine biodiversity with a focus on cetaceans, and habitat modelling work on five species of large whales in the Eastern Tropical Pacific (ETP). CPPS recently published an atlas on distribution, migration routes, critical habitats and threats for marine mammals in the ETP, which includes information on ship strikes. Current work includes habitat modelling and satellite tracking for collision risk assessment in Ecuador. CPPS has recommended increased reporting of collisions in the area.

CPPS are also involved in *Sibimap.net*, which is a regional database on cetaceans and turtles. Twenty-six cases of ship strikes were recorded in this system, mainly humpback but also fin and southern right whales. Félix confirmed that he would introduce these data into the ship strikes database. He recognised that there are probably other unreported ship strikes in this area. CPPS is also working on ongoing projects with NOAA, and also with Guzman from the Smithsonian on tagging and Redfern on spatial modelling.

It was suggested that whaling catch data for the region (including the revised Soviet catch data) should be included in this dataset as this will provide considerable information on past occurrence and distribution. These data are available from the IWC Secretariat. Félix recognised that there is probably quite a lot of additional data that has not been reported and, as noted above, there is a need to engage shipping and maritime authorities to submit this potential data, perhaps by holding a regional workshop similar to the present one. Again the Workshop highlighted the importance of raising awareness with all stakeholders within the relevant region. Félix also noted the importance of having improved information on abundance and relative density and the need for systematic efforts throughout the region, as well as information from platforms of opportunity such as whalewatching vessels.

5.2.3.3 COUNTRY SPECIFIC INFORMATION

In response to a question from the group about information on ship strikes, high risk areas and species from other countries in the region that were not specifically noted on the agenda, Guzman noted that a dead sperm whale was recently brought into the Port of Balboa at the Pacific entrance to the Panama Canal, but it was not known where the initial collision occurred. It was noted that at the recent IWC rangewide workshop on North Pacific gray whales, available information on ship strikes had been compiled (IWC, 2015).

5.2.4 Data gaps in the Wider Caribbean on whale and shipping distribution

While data on shipping in the Wider Caribbean is fairly extensive and readily available, it was agreed that data on marine mammal abundance and distribution are extremely limited in this area. The Workshop **welcomes** the work completed as part of the UNEP LifeWeb program that resulted in the development of range maps for some 25 marine mammal species within the region. Each map

indicates areas where species are expected to be present. However, they contain no information about species density within the range or critical habitat. Consequently, whilst a valuable first step, the Workshop **cautions** that the ways in which these maps can be used in risk assessment and marine spatial planning is limited. For example, a species richness map derived from all 25 species will prioritise species that have restricted area distributions over species that have a broader distribution. For an individual species, use of the range map can show where human threats occur within the range, but cannot identify areas of highest risk. To move forward with reliable designation of marine protected areas and ship-strike mitigation efforts on a sound scientific basis, a high priority needs to be placed on obtaining better abundance and distribution data throughout this area (e.g. through systematic marine mammal surveys).

The Workshop **recognises** the logistical and financial difficulties inherent in undertaking the 'ideal' survey, i.e. a major synoptic survey covering the whole region (*cf* the ACCOBAMS Survey Initiative discussed in the Beaulieu report) to provide a baseline for the region upon which to begin to evaluate and prioritise all potential threats, not just ship strikes. However, as part of a strategy to develop research plans (as was developed for the ACCOBAMS Survey Initiative), it **recommends** that a regional expert group be established to examine and develop a number of (not mutually exclusive) options and overall strategy for obtaining better quantitative data including:

(a) the careful use of opportunistic effort (e.g. on vessels crossing the region, whalewatching vessels, etc.) to inform options (b) and (c);
(b) the use of spatial modelling approaches using data from 'potentially appropriate regions elsewhere' in conjunction with the limited information available within the region, to suggest areas upon which to base smaller systematic effort; and
(c) a costed proposal to undertake a suitable baseline survey or surveys (which may incorporate national efforts if co-ordinated survey designs and methods are used) for the wider region which may focus on particular priority species and methods (e.g. visual, acoustic, mark-recapture).

However, if extensive surveys were required, it was noted that many of the 31 countries in the region lack the resources with which to undertake extensive, systematic ship or aerial surveys, especially over the time periods that would likely be needed in order to establish the degree of certainty needed to convince managers and impacted stakeholders to initiate any significant mitigation measures based upon stable high risk areas.

Bédel and Jean informed the group that in addition to the AGOA Sanctuary waters, the French MPA Agency has undertaken line transect surveys since 2012 in the waters of Anguilla, St Marteen, Saba and St Eustatius, in partnership with those Islands and with the support of SPAW-RAC. However, it was noted that convincing governments in the region to undertake surveys targeted at just marine mammals was difficult and that they were more likely to consider supporting multi-purpose or multi-species surveys.

In addition, potential alternate methods for collecting relevant data on both cetaceans and ship strikes were discussed. These included the possibility of using existing abundance and distribution data from whalewatching operations, the establishment of opportunistic sightings networks, surveys of local fishermen and the placement of marine mammal observers aboard Oceanographic surveys. With regard to the latter, Félix informed the group that part of the cetacean distribution data that had been used for modelling in the eastern South Pacific, was collected by observers aboard Oceanographic surveys. However, all opportunistic efforts would require some time and resources and therefore their biases and limitations would need to be carefully considered against the type and accuracy of information required. It was noted that some systematic data, that has not yet been fully utilised, may already exist. For instance, the fast ferries to Isla Margarita off Venezuela had struck whales in the past and so had consulted with local scientists and placed observers on their vessels for some time. The Workshop **recommends** identifying and utilising already existing data on ship strikes collected by, for example, the shipping industry for the safety of their operations and passengers, such as from the ferries, and **encouraged** the industry in all countries to collect such data.

With regard to the lack of information on cetaceans and the issue of ship strikes in particular, it was noted that managers would need to know if there was a population of cetaceans whose abundance was low enough that it might be impacted by ship strikes, and, if so, they would need extensive baseline information about the seasonality and longevity of any 'hot spots' and high risk areas. The former would require less effort (and resources) than the latter. In some areas, existing data might be utilised to establish reasonable population estimates. For instance, it was noted that in some areas in the region, long-term photo-identification catalogues of resident sperm whale populations might be used.

The Workshop **recommends** that SPAW implement actions in the MMAP aimed at identifying areas where long-term photo-identification catalogues of sperm whale and other cetacean populations may currently exist and encourages the holders of such data to produce population estimates.

With regard to improving the reporting of ship strikes in the region, the Workshop **agrees** that this was primarily a matter of education and capacity building. It was suggested that the stranding networks in the region were probably not aware of the IWC ship strike database. The Workshop **recommends** that information on the importance of reporting such incidents, and instructions how to do so, should be distributed to them. It was noted that the IWC and SPAW had co-sponsored some training for veterinarians from the region in the determination of human impacts, such as ship strikes, with stranded animals, but that more training will be valuable. Most discussion on improving the awareness and reporting of ship strikes from the shipping industry focused on how best to ensure relevant information is distributed through the IMO. It was noted that the IWC has previously brought the issue of ships colliding with whales to the attention of the IMO, and that guidance information had subsequently been provided and adopted. In addition, the IWC had conducted a session at the IMO explaining the IWC ship strike database. However, simple instructions on the importance and use of the IWC ship strike database that could be distributed to shipping interests would be helpful to raise awareness and reporting. Therefore the Workshop **recommends** that the IWC develop simple and specific instructions for mariners about what to do if a ship strike is observed, and that this be brought to the MEPC at the IMO.

In response to a question about the number and consistency of IWC member countries reporting ship strikes through annual National Progress Reports, it was noted that only a few countries consistently reported. As with many countries in the Wider Caribbean, some of this may be due to

a lack of infrastructure (e.g. reporting or stranding networks), and some may be reflective of a true lack of strikes. However, given that the Workshop **agrees** that in most cases it is likely due to the former, the Workshop **recommends** that IWC member countries make a more concerted effort to report strikes to the IWC database, either through establishing the needed capacity (e.g. establishing or reinforcing stranding networks) or better outreach to existing infrastructure.

6. SUMMARY AND EVALUATION OF EXISTING MITIGATION ACTIONS

6.1 Global and other non-Caribbean

6.1.1 Technological

Silber presented on the use of technologies to reduce vessel collisions with whales. Advances in developing and refining various technologies may aid in the detection of whales at sea. Devices that have received consideration for this purpose include, for example, heat-detecting devices; infra-red and other enhanced optics; SONAR or other forms of 'active' acoustics; passive acoustics; LIDAR; satellite imagery; and satellite tagging. A 2008 workshop reviewed and assessed technologies as a means of reducing vessel strikes of whales. The workshop concluded that various technologies may have application in this context, but none were judged fully capable of addressing this situation in their present form.

The Workshop noted that detection of whales is only a part of the equation: even if detection is at or near 100%, there may be little the mariner: (a) is able to do given that substantial distances are needed to stop or turn a large vessel; or (b) might be willing to do in the light of any information provided. The posting of additional look-outs and vessel-mounted active acoustics devices, for example, provide only 'near-field' detection and may provide the mariner with little time to react. In addition, we now know that, in some contexts, asking mariners to voluntarily take actions to avoid whales (and, even if required to do so), few, if any, may actually respond by taking evasive action such as altering course or speed. Workshop participants also concluded that among the technologies considered, passive acoustic detection and predictive modelling (provided that it is based on adequate data, e.g. see discussion under Item 5.1.5.1) are among the most promising. Both of these approaches are relatively cost-effective, safer and possibly more comprehensive than surveys with low coverage over wide areas, are applicable year-round, and may allow for advanced planning on long trips. Maritime interests strongly advocated for the use of information (such as predictive modelling) that would allow for avoidance of whale aggregation areas via advanced voyage planning; mariners are likely to do this if armed with sufficient information.

In discussion, it was noted that observers on the bridge have a large blind spot in front of the vessel, and that a large vessel can take many miles to come to a stop although this varies widely between vessels of different designs. This means that the effectiveness of observers to avoid cetacean strikes are reduced, especially given that observers cannot be effective in the hours of darkness (this is especially relevant to the cruise industry because cruise ships often make transits between ports at night), and in light of the often unpredictable behaviour of whales including their non-response to approaching vessels.

The excellent work undertaken in recent years regarding the use of traffic separation schemes (TSS) and routing to improve not only mariners safety but also to reduce the risk of ship strikes (e.g. Panama, USA, Spain) has been extremely valuable. However, the Workshop **recognises** that this work has also revealed that the reverse may be true, i.e. TSS also have the potential to increase the likelihood of ship strikes if the routes go through high density cetacean areas. Research in feeding areas has also revealed that strategies developed for one species may not be optimal for other species (Redfern *et al.*, 2013). These situations may be problematic both for cetaceans and mariners. The Workshop notes that there are several hundred such schemes throughout the world that have been established primarily for safety of mariners. It is clearly not practical to examine all of these in the light of cetacean data but the Workshop **agrees** that for certain priority populations that may be vulnerable (e.g. see the list of populations suggested by the IWC Scientific Committee as possible candidates for Conservation Management Plans), there is merit in examining whether schemes exist within the range of these species, and if so, examining whether the existing cetacean data suggest that they may warrant investigation to determine whether simple improvements may be possible that reduce the likelihood of ship strikes without unduly affecting shipping.

In addition, the Workshop **recommends** that an appropriate mechanism be developed with IMO to encourage consideration of cetacean distribution and occurrences when new or revised routing schemes are brought to IMO.

Laist reported that a paper is in the final stages of preparation for publication in *Endangered Species Review* by Megan McKenna and John Calambokidis analysing the behaviour of feeding blue whales during close approaches by commercial ships in the shipping lanes of Los Angeles and Long Beach in southern California[3]. The paper provides the first information on the underwater behaviour of whales near ships using D-tags to record whale diving and movement patterns and shows that blue whales may 'dip dive' when a vessel approaches and remain submerged while it passes. The Workshop **agrees** that further studies using D-tags applied to whales in or near shipping lanes off major ports may represent the best opportunity to correlate reliable data on whale behaviour and response (or lack thereof) with ship speeds available through AIS records during close approaches by ships. Such information can be of broad value in developing mitigation measures. The value of telemetry data in examining potential changes or establishing TSSs is illustrated in Irvine *et al.* (2014).

In a related discussion on behaviour, it was noted that some technologies aimed at 'warning' whales away from an oncoming vessel may mean they are deterred from their preferred habitat which could be especially detrimental to endangered populations. Anecdotal and scientific (Nowacek *et al.*, 2007) evidence suggests that whales do not react reliably to warning sounds of varying types and that in some cases such sounds may actually encourage whales to come to the surface and spend more time there, i.e. increasing risk of collision. It was noted that in the USA at least, a permit would be required to introduce additional loud sounds into the water as it may be considered 'harassment' of an endangered species.

Couvat introduced Couvat and Gambaiani (2013), which is a 2013 review of the technological measures implemented worldwide to reduce the risk of ship strikes. He noted that although continual improvements were taking place, the major drawbacks inherent in each tool had not yet been overcome. He drew particular attention to three new methods.

[3]Now published as: McKenna *et al.* (2015).

(1) The use of drones for the detection of marine mammals. Small drones are becoming more commercially accessible and several models could be used for marine mammal prospections. Some have already been successfully tested for that purpose. However, for the purpose of reducing ship strikes, drones might have a limited range but this technology is evolving fast.
(2) The results of the LIDO program (Listening to the Deep Ocean environment). LIDO is an international project with stations in the Mediterranean Sea, Atlantic and Pacific Oceans. It is based on passive acoustics and allows the real-time long-term monitoring of marine ambient noise as well as marine mammal sounds at cabled and standalone observatories. The main advantage of this system is that it can localise any kind of acoustic sources in three dimensions and automatically detect and classify cetacean acoustic signals. Moreover, in the near future the LIDO project will be coupled with the Ambient Noise Imaging (ANI) technology, which will allow detection of non-vocalising individuals using ambient noise, thus overcoming a major drawback of passive acoustics.
(3) Use of the REPCET system (REal-time Plotting of CETaceans). REPCET is a collaborative software developed by scientists, the shipping industry and the maritime authorities, to allow ships to inform each other of the positions of whales sighted by the crew in real-time through satellite communication. Positions are displayed on an interactive map on deck and collision risk areas grow with time around the initial position of the whale, accounting for the movement of the animal. It is currently being developed within the framework of the Pelagos Sanctuary in the western Mediterranean Sea, and 11 ships were equipped with the system at the time of the current Workshop. The system is evolutionary and can be coupled with other tools like prediction models and automatic night detection tools. Moreover, this system is applicable worldwide in other areas affected by collisions. Collaborations are underway with British and Spanish NGOs for the Bay of Biscay and the Strait of Gibraltar. Thoughts on the issue of ship strikes in the Caribbean between SPAW-RAC, ACCOBAMS and the Pelagos Sanctuary were initiated in 2011 and presented during the 2nd ICMMPA (International Conference on Marine Mammal Protected Areas) in Martinique Island. The use of REPCET coupled with a training programme for ship crews were the main potential measures mentioned.

The general Workshop conclusion on technological tools is that none of the solutions available at the moment are perfect or assured to address the problem, or applicable worldwide. The review chapter introduced by Couvat suggested that a combination of complementary tools adapted to the biological and economical characteristics of the area concerned, coupled with adequate education measures, is the best option to significantly reduce the risk of ship strikes.

In discussion, the Workshop noted the general absence of controlled studies to demonstrate the effectiveness of mitigation measures, including the commercial programme REPCET. As noted at the Beaulieu Workshop (IWC, 2011), although systems might alert mariners to the presence of whales in an area, there is no specific advice for mariners upon what actions to take (apart from reducing speed, see below). It was unclear how effectively mariners were able to respond since changing course would require knowledge of the presence or absence of whales along the new track.

Macdonald introduced progress made at the Stellwagen Sanctuary for reducing ship strikes (see Wiley *et al.*, 2013). Because of its close proximity to transiting ships, Stellwagen Bank National Marine Sanctuary had become a 'hot spot' for collisions between vessels and whales. To reduce incidents near the Sanctuary and in its surrounding waters, the managers of the Sanctuary:

(1) identified a new Boston Traffic Separation Scheme (BTSS) route to spatially separate whales and ships;
(2) gained stakeholder and government acceptance for the route;
(3) verified mariner compliance;
(4) assessed approaches to improve whale detection; and
(5) improved communications.

To understand the spatial distribution of whales, the managers of the Sanctuary:

(1) plotted the distribution and relative abundance of right and other baleen whales within the sanctuary and adjacent waters;
(2) identified whale high-use areas;
(3) modelled various TSS reconfigurations through the Sanctuary to spatially separate whales and ships; and
(4) calculated the risk reduction and industry impact of alternative routes.

The combined agendas of industry priorities, conservation needs, and federal planning activities came into alignment and in December 2006 the IMO accepted a proposal submitted by the USA to reroute the BTSS. The new BTSS became operational in July 2007. Subsequent monitoring using Automatic Identification System (AIS) demonstrated high compliance by transiting vessels. Since the BTSS rerouting, there has been no documented case of a ship striking a whale in the sanctuary area.

Working with industry, government and academic partners, the managers of the Sanctuary developed a strategy that led to development of a near real-time acoustic detection system in the BTSS, which consists of ten automatic detection buoys that 'listen' for right whale 'up calls' and (using a satellite connection) advises mariners to slow to ten knots and heighten observation when activated. This is available online at *http://www.listenforwhales.org*.

These developments led to production of the *Whale Alert* app, available on iTunes. *Whale Alert* is a free iPad/iPhone-based mobile application that notifies mariners (and other users) regarding right whale protection and management information along the US eastern seaboard, including: current ship location, ship speed restriction zones, mandatory ship reporting areas, and areas to be avoided.

In discussion the Workshop **recognises** the value of the work undertaken at Stellwagen and noted that although risk of strike was still present in the new TSS, the overall effect had been to reduce vulnerability, and that no ship strikes had been recorded from the Sanctuary area since 2007. The effectiveness of the TSS had been assisted by the local oceanographic conditions which caused whales to aggregate in particular locations. The Workshop **endorses** the 'App' approach which was an excellent example of collaboration between industry and other organisations. The Workshop also noted that the seafloor hydrophone arrays were recording right whale calls for a longer period (up to 220 days per year) than had been expected from previous knowledge of right whale distribution and migration studies.

6.1.1.1 THERMAL IMAGING TECHNOLOGY

The Workshop noted that a new thermal imaging technology to detect whale blows had recently been successfully trialled by the German research vessel *Polarstern* in Antarctic waters. The methods would now be trialled in warmer waters around the Canary Islands to test their effectiveness under these conditions.

6.1.2 Operational

Silber presented Vanderlaan and Taggart (2007) which analysed the relationship between vessel speed and the fate of a whale involved in a ship strike. Based largely on this study, the United States NOAA Fisheries Division established a regulation in December 2008 requiring vessels ≥65 feet in length to travel at speeds of 10 knots or less at prescribed times and locations along the US eastern seaboard to reduce the likelihood of fatal collisions with the endangered North Atlantic right whale. Silber discussed a recent study that quantified mariner response to the regulation. Amongst other things, extensive outreach efforts were undertaken to notify affected entities both before and after the regulation went into effect, including several programs that provided non-punitive notifications of violations of the regulation. Using Automatic Identification System data (that provided a rather precise census [rather than a sample] of every trip in the speed restriction zones) the authors had remotely monitored vessel operator compliance with the speed regulation. The speeds of 201,862 trips made between November 2008 and August 2013 by 8,009 individual vessels were quantified. Comparison of speeds were made both when the restrictions were in effect and in the same geographic locations when the restrictions were not in effect. Several hundred vessel operators (*n*=437) or their parent companies, some of whom had been observed exceeding the speed limit, were contacted through one of four non-punitive notification programs. A fraction (*n*=26 vessels/companies) received citations and fines.

The study found:

- despite considerable efforts to inform mariners, initial compliance was low (<5% of the trips were completely <10 knots) but improved in the latter part of the study;
- trips by cargo vessels exhibited the greatest change in behaviour followed by tanker and passenger vessels; tanker vessels made small relative adjustments in speed (few trips were completely under 10 knots), but their typical at-sea speeds are around 10-14 knots suggesting that their preferred strategy was to avoid fines by traveling at under 12 knots;
- the effectiveness of several notification/enforcement programmes in improving compliance was assessed; each programme improved compliance to some degree and some may have influenced compliance across the entire regulated community: in order of effectiveness, these were enforcement-office information letters, monthly summaries of vessel operations, and direct at-sea radio contact by the US Coast Guard; and
- citations/fines appeared to have the greatest influence on improving compliance in notified vessels/companies - statistically significant changes in operations occurred after fines were issued, and the impact of enforcement efforts likely impacted compliance across the entire regulated community.

A related modelling study (Conn and Silber, 2013) concluded that these speed restrictions had reduced the probability of a fatal ship strike of a right whale by 90%. A study of ship hull hydrodynamics involving a scale-model whale and ship in a flow-tank simulation found that 'propeller draw' and hull configuration would result in a whale being pulled towards the hull, the magnitude of the draw was related to ship speed. Thus a whale at the surface, near the surface or even engaged in a dive might be pulled toward the ship. The whale could be expected to be pushed away by the 'bow cushion' of water in front of the bow and then drawn back in amidships. The models used in this experiment were to scale but did not take into account whale behaviour or life-like whale tissue.

In discussion, the Workshop noted that the hydrodynamic effect of a bow cushion and the subsequent draw towards the hull (experienced for example when two ships pass at close quarters) were well known and could be expected to initially move objects away from an oncoming vessel. However, suction from the vessels propeller and from the hull itself will then cause objects to be drawn back towards the vessel from aft of the mid-ship area and this effect also extends up to 15-20m below the vessel as well as to the sides.

The Workshop congratulated the authors on this work and discussed an appropriate speed to recommend to reduce severity of ship strikes. It noted that lower speeds may compromise manoeuvrability and the ability to keep to schedule (although this can be ameliorated by advanced voyage planning) and may therefore reduce compliance rates, while higher speeds caused a steep increase in the severity of a strike. The Workshop **agrees** that available information indicates that the probability of a strike being lethal is reduced according to the curve shown in Fig. 1. In areas where there is a high risk of ship strikes and it is not possible to separate whales and vessels through routing measures, restriction in speed is the most effective way to reduce lethal strikes. In areas where 10 knots has been used, it has been found to be effective (Conn and Silber, 2013; Laist *et al.*, 2014).

Silber continued with a presentation of recent work on time and area specific speed restrictions (Conn and Silber,

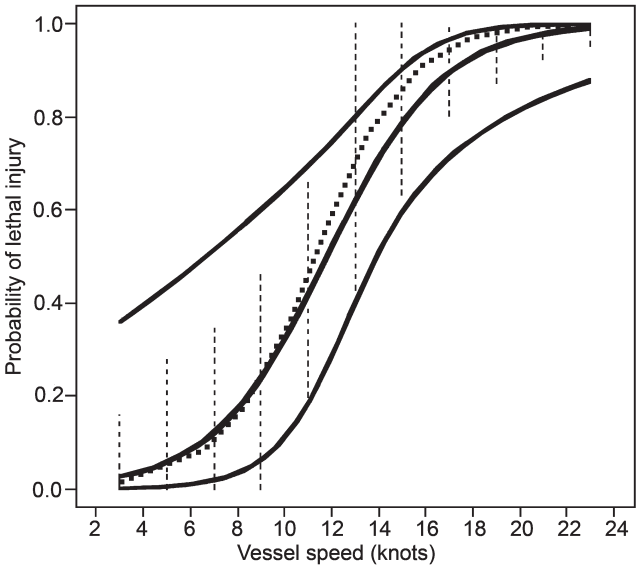

Fig.1. Probability of a lethal injury resulting from a vessel strike to a large whale as a function of vessel speed based on the simple logistic regression (solid heavy line) and 95% CI (solid thin lines) and the logistic fitted to the bootstrapped predicted probability distributions (heavy dashed line) and 95% CI for each distribution (vertical dashed line) where each datum (triangle) is the proportion of whales killed or severely injured (i.e. lethal injury) when struck by a vessel navigating within a given two-knot speed class. There are no data in the 4-6 knot speed class. [Taken from Vanderlaan and Taggart (2007), used with permission].

2013). The mortality risk to North Atlantic right whales when the vessel restrictions were and were not in effect had been modelled, including: (1) estimation of the probability of lethal injury given a ship strike as a function of vessel speed; (2) estimation of the effect of transit speed on the instantaneous rate of ship strikes; and (3) a consideration of total risk reduction. Logistic regression and Bayesian probit analyses indicated a significant positive relationship between ship speed and the probability of a lethal injury. The study found that speeds of vessels that struck whales were consistently greater than typical vessel speeds for each vessel type and regulatory period studied; a use-availability model fit to these data provided strong evidence for a linear effect of transit speed on strike rates. Overall, the study estimated that vessel speed restrictions reduced total ship strike mortality risk levels by 80-90% with levels that were closer to 90% in the latter two of the four active vessel speed restriction periods studied. To the author's knowledge, this is the most comprehensive assessment to date of the utility of vessel speed restrictions in reducing the threat of vessel collisions to large whales. The findings indicate that vessel speed limits are a powerful tool for reducing anthropogenic mortality risk for North Atlantic right whales.

The Workshop discussed the drivers behind the acceptance of the speed restrictions and noted that the punitive measures had shown considerable effect. However, the Workshop noted that a reduction in the overall mean speed may have been achieved through the advocacy campaign, even if the 10 knot threshold had not been achieved, and this would still have had a conservation benefit. On this question of compliance, CLIA noted that it was part of its contract with cruise passengers that its members vessels would comply fully with all maritime regulations.

MacDonald introduced Wiley *et al.* (2011) which investigated AIS records from the Stellwagen Bank National Marine Sanctuary and applied hypothetical speed restrictions to observed ship traffic. For 2006, the study calculated a predicted probability of lethality for each grid cell within the Sanctuary from the cell's mean speed and a mortality curve. The study showed that the mean speed within the Sanctuary was 13.5 knots and that the choice of speed restriction had a major effect on mortality levels. The study also noted that the overall mortality reduction in any area, where speed limits were considered or imposed, would necessarily be related to the pre-existing average speeds in that area.

The Workshop **noted** that the Stellwagen Bank Sanctuary provided a unique opportunity to study overlap of whale and shipping densities and to evaluate the effectiveness of different management regimes which could be applied to other areas.

Laist introduced a study (Laist *et al.*, 2014) evaluating the effectiveness of the December 2008 vessel speed regulations along the US east coast. The regulations apply to ten seasonal management areas (SMAs) during periods of peak right whale occurrence. The authors assessed differences in ship-struck carcass discovery rates inside or within 45 n.miles of any SMA boundary during SMA effective dates during an 18-year pre-rule period and 5-year post-rule period. The 45 n.mile radius around SMAs was used to account for carcass drift between time of death and carcass discovery. The analysis revealed that 15 of 17 ship-struck right whales found along the US coast during the pre-rule period were discovered in or near SMAs for an average discovery rate of 0.72 carcasses per year (range 0 to 2 per year) in or near SMAs. In the five-year post-rule period no carcasses were discovered in those areas. This represented a statistically significant reduction and is more than twice as long as the longest pre-rule period without finding a ship-struck carcass in or near SMAs. The analysis indicates the rule has been effective at reducing lethal right whale collisions with ships.

The Workshop **endorses** the conclusion that speed reductions to 10 knots help to prevent lethal ship strikes. The relationship between effectiveness and compliance is important, in that even if compliance with speed limits is less than 100% it will still yield conservation benefit. The Workshop **stresses** the importance of informing the shipping industry of the success of the speed reduction measures in order to confirm their value and to further encourage compliance.

Ritter and Panigada introduced Ritter *et al.* (2014) and Ritter and Panigada (2014) which were guidance notes to the cruise industry and recreational sailing groups on planning measures to reduce ship strikes (these are summarised under Item 7).

6.1.3 Legal and voluntary

Silber *et al.* (2012) noted that in the last decade or so a number of countries have turned to the IMO for assistance in reducing vessel collisions with large whales. As the recognised authority on worldwide navigational safety, the IMO also has a history of involvement in marine environmental safety. It was first approached for the purpose of reducing vessel strikes of whales in 1998 by the USA through submission of an information paper on the vulnerability of North Atlantic right whales to ship strikes; a step that helped sensitise the IMO to this issue. This was followed by a proposal to establish a Mandatory Ship Reporting system in a key right whale habitat in US waters to alert mariners about ways to avoid ship strikes with right whales. In the years that followed Spain, Canada, and the USA sought and received IMO endorsement of various routing measures to reduce vessel strikes of whales. In recent years a number of additional actions have been taken around the world to establish IMO-endorsed vessel strike reduction measures; some proposals are now pending, including the creation of Traffic Separation Schemes (TSSs) in waters off Panama.

The process, including submission of a proposal to the IMO, the IMO's review of the proposal, and the establishment of the measure by the member state(s) generally takes about two years. In preparing a proposal to the IMO, it is imperative to provide sufficient information to the IMO about: (a) the purpose of, and justification for, what is being proposed; (b) the magnitude of the impact (including economic) on the vessels affected and the expected consequences (including navigational safety) for the maritime community; and (c) the expected outcomes. Because of its truly global reach and its capacity to inform nearly all maritime states, the IMO can be an important asset in efforts to reduce threats to the marine environment that result from activities by shipping interests.

The Workshop **recognises** the IMO as the competent body for introduction of marine navigation measures on either safety or environmental grounds. The process for adopting new routing measures commences with the establishment of a compelling need, including a description of the impact on the industry.

The Workshop **considered** the possibility of the IMO adding a provision to its process for establishing new routing measures that would require applications to consider the effect on local cetacean populations. This would allow an opportunity to consider reduction in speed, and also ensure that any new routing measures took account of cetacean distributions. The Workshop **further considered**

a communication to the IMO to describe the effectiveness of speed reduction measures in reducing the severity of ship strike events. It **agrees** that both these ideas were valuable and requests the IWC Secretariat to consult with IMO on the appropriate processes to follow.

The Workshop then discussed the importance of providing guidelines to industry and noted a conclusion from the 2012 Tenerife workshop to provide information on marine environmental measures from a single source for ships undertaking international voyages. Silber noted that this was a large task but that work on 'A Mariners Guide to Large Whales and Whale Conservation Measures in the North Atlantic Ocean' was underway. The Workshop **commends** this work and suggested that ultimately such a document could contain reference to other environmental management measures including protected areas. The Workshop further **recognises** the importance of feedback from mariners and all industry sectors and encouraged outreach through the Nautical Institute towards the completion of this project.

Panigada presented an update on specific management measures currently taken in the Mediterranean Sea: (1) the Notice to Mariners to protect cetaceans from the risk of ship collisions in the Strait of Gibraltar; and (2) the new location for the 'Cabo de Gata' Traffic Separation Scheme.

With regard to the Strait of Gibraltar, Panigada reported that in 2005 a critical area for sperm whales was identified in the zone. A Notice to Mariners was published in January 2007 by the 'Instituto Hidrográfico de la Marina' (Spanish Navy Hydrographical Institute under the Ministry of Defense). This notice establishes a security area characterised by high densities of sperm whales, where crossing ships are recommended to limit maximum speed to 13 knots, following the suggestions by Laist *et al.* (2001), and to navigate with particular caution. The notice was to be broadcast regularly by VHF radio from April to August and included in the Nautical Charts. The recommendation is poorly known by mariners; it could be improved by the notice being broadcasted regularly by VHF radio as originally planned, and also included in the training literature for the ferry companies.

Regarding the waters off the Natural Park of Cabo de Gata-Nijar, Panigada reported that these are an extremely valuable and sensitive coastal habitat and one of the most important Special Areas of Conservation for the bottlenose dolphin (*Tursiops truncatus*) and the loggerhead turtle (*Caretta caretta*) within the framework of the European Union's Habitat Directive. The Spanish Maritime Authorities promoted, inside the IMO, the repositioning of the TSS of Cabo de Gata from five to 20 n.miles off the coast. The new location, operating since the 1 December 2006, was published in the Notice to Mariners and the International Nautical Charts.

The first initial results showed an increase of the relative density of pilot whales (*Globicephala melas*) in the area, both for 2007 and 2008 with respect to the previous years. These preliminary results suggest that the new southerly position of the Cabo de Gata TSS may have had positive benefits on these populations.

Panigada also reported on a proposal, led by France, to register the Pelagos Sanctuary as a PSSA under the IMO framework. Discussion is currently taking place. The area suggested is the Pelagos Sanctuary under the framework of the IMO which does not represent a comprehensive representation of cetaceans' habitats in the area, since critical habitats for fin whales are also present towards the Balearic Islands. In addition, there is evidence from ship strikes risk maps and traffic maps of areas of high risk in the Gulf of Lion, outside the proposed PSSA borders. Careful attention should be devoted to extending the surface of the proposed PSSA so that all critical habitats for cetaceans in the region will be covered. Attention should be also dedicated to speed limits within the new area; while it is widely recognised that a reduction in speed may decrease the chances of collision risk, a sharp decrease may drive ship captains to increase speed while transiting outside the PSSA borders, thus increasing the risk of ship strikes in the ACCOBAMS area.

The Workshop thanked Panigada for his reports and noted the importance of setting PSSA measures in connection with actual cetacean distribution rather than political boundaries for sanctuaries.

6.1.4 Summary of potential impacts and concerns for shipping

The Workshop **emphasised** the importance of working with a broad range of industries in developing proposals for mitigating ship strikes, and **commends** the work undertaken to date to engage with industry. In this context, the Workshop **noted** the essential requirement for high quality data to describe the problem and the expected effect of any mitigation, both in terms of risk reduction for cetaceans and the consequences for vessel routing.

The Workshop emphasised the global distribution of shipping operations and cetaceans and **re-affirmed** the primacy of the IMO as the competent international organisation responsible for vessel routing measures.

6.2 Wider Caribbean Region

6.2.1 SPAW Marine Mammal Action Plan

Jean introduced UNEP (2008). This is the UNEP Marine Mammal Action Plan (MMAP) for the Wider Caribbean Area. A section in the MMAP concerns human impacts on marine mammals including cetacean strikes. The Plan calls for analysis of the risks and improved understanding of how vessel strikes affect marine mammal populations. There have been disentanglement workshops where, on the day before the training, a training on the forensic detection of ship strikes on stranded animals was taught. The REPCET system is being considered for use in this area, but more AIS data are needed for this to be effective. There are major technical problems with this system in the Caribbean area, mainly to do with the military.

The Workshop **endorses** the priority action in the SPAW MMAP Secretariat to enter into an MoU with the IWC on the exchange of information (i.e. both organisations to exchange information and expertise). The Workshop also **recommends** that SPAW try to acquire real time and historical ships track data for the Caribbean (AIS, LRIT, etc.) and the technical expertise to process it.

The Workshop also **recommends** that SPAW and its member countries investigate the best means to inform commercial ships, recreational boaters, and other maritime interest, when a voyage enters a Sanctuary or Marine Protected Areas (for example through the organisation of a Workshop).

The SPAW MMAP is still primarily at the data collection stage. With regard to ship strikes, information on cetacean distribution, strike numbers and risk assessments are needed. Although there is substantial shipping traffic through the region, without cetacean distribution and strike data it cannot be determined if ship strikes are truly a problem. Redfern noted that when using range maps, given the lack of sightings data supporting them, any ship strike risk assessment will be biased toward areas with the

highest density of shipping. The group discussed how the IWC might be able to assist. The Workshop **recognises** that there are cases where extrapolation from data rich to data poor areas is acceptable (see Item 5.1.5.1 on blue whales in Sri Lanka) and similar extrapolation could be useful in the Caribbean region.

6.2.2 UNEP-CEP spatial modelling

Jean introduced LifeWeb Spain (2014), a major marine spatial planning project to: (1) produce range maps for various cetacean species (usually based on expert judgement rather than data); and (2) collect data on shipping, shipping regulations and conflicts. There are multiple ways to analyse the data from the project, e.g. interested parties can look at different factors depending who is involved. Scenarios were presented as ideas to show how things may work. When presenting findings to industry, presentation is important and there is a need to provide persuasive arguments that the data do correspond to the predicted scenarios and that resultant recommendations are justified.

The Workshop **agrees** that the adopted approach was potentially useful, especially in regions with limited resources, multiple country jurisdictions and where the species distribution would likely cross national boundaries. The project had brought many countries together and had already generated new co-operation. However, the Workshop refers to its earlier discussions and recommendations under Item 5.2.4 and **cautions** against the results being treated as being adequate for targeting management initiatives before sufficient (or in some cases, any) data are available. Although this has not happened as yet, the Workshop identified this as a potential danger given similar experiences in other parts of the world.

6.2.3 Panama TSS proposal

Guzman presented a paper on the Panama TSS proposal (Guzman *et al.*, 2013). Humpback whales (*Megaptera novaeangliae*) are the species most often believed killed by ship strikes in some countries in the region, and although central America is a wintering area for populations from both the Northern and Southern Hemispheres, existing efforts to reduce ship-whale collisions are meagre. The authors evaluated the potential collisions between vessels and humpback whales wintering off Pacific Panama by following the movements of 15 whales tagged with satellite transmitters and comparing these data with tracks plotted using AIS real-time latitude-longitude points from nearly 1,000 commercial vessels. Movements of whales (adults and calves) in the Gulf of Panama coincide with major commercial maritime routes. AIS vessel data analysed for individual whale satellite tracks showed that 53% (8 whales) of whales had 98 encounters within 200m with 81 different vessels in just 11 days. In early 2012, the implementation of a 65 n.mile Traffic Separation Scheme (TSS) and a 10 knot maximum speed for vessel routing into the Gulf of Panama during the wintering season was suggested. In so doing, the area for potential whale-vessel collisions could be reduced by 93%. This paper prompted the need for a local policy.

Consequently, a plan for designing TSSs was presented to the Panama Maritime Authority (AMP) technically supported and consented by the Maritime Chamber of Panama, the Panama Canal Authority (ACP) and the Smithsonian Institution. This encompassed four TSSs, one for the Caribbean and three for the Pacific, and included a network of three Pacific TSS providing an extensive Inshore Traffic Area allowing more coastal safety for fishing vessels and over ten sensitive marine protected areas, and a speed limit at the main TSS-Gulf of Panama, during the peak four months of wintering whales. The plan was submitted to IMO and approved at NAV-59 in September 2013 and at MSC-93 in May 2014, to be implemented in December 2014.

The process of seeking IMO approval of the Panama TSSs was complicated and IWC members could learn from this experience. Proponents should consider working with someone inside the organisation in order to make sure any documents are submitted correctly, and to the correct session. Countries could sponsor a proposal at IMO, rather than the proposal coming directly from the IWC. Any proposal must treat each country (or a group of countries) in the area individually, as well as involving all stakeholders, and encourage data collection in each place.

The Workshop **commends** the authors and the Government of Panama on the strong use of scientific data, extensive engagement with the industry and relevant local agencies, as well as the use of other successful previous proposals (e.g. of TSS adjustments), and the thoroughness and speed of their successful effort at IMO. In particular the Workshop **noted** that the combination of respect for both the science and the human element was a good model for success. The Workshop also **commends** the content of the proposal itself for its integration of other environmental concerns, including routing which avoided several coastal Marine Protected Areas, one of which is a World Heritage site. In discussion, the authors noted that the TSSs for both the Caribbean and Pacific approaches to the Canal were originally combined in one proposal, but after consultation with IMO personnel they were split into two, in order to avoid any difficulties with one affecting the other. This emphasises the importance of collaboration with member governments on any submission to the IMO.

The Workshop **recommends** that for any TSS or other ship routing measures stakeholders be engaged from the beginning and consulted often and regularly throughout the process, for example Panama's role in the study on the study of whale and vessel distribution on the Pacific side of Panama.

6.2.4 CPPS eastern South Pacific

The Workshop **commends** the great efforts made by the CPPS in promoting whale research and conservation in southeast Pacific countries (see also Item 5.2.3.2), and **recommends** building on recent cooperation with the IWC (i.e. the entanglement response training) and expanding this collaboration to include working with the IWC SSWG and the Scientific Committee regarding exchange of information, networking and mitigation measures to reduce collision risk.

6.2.5 Other countries

There was no further information presented here.

7. DISCUSSION OF POTENTIAL ACTIONS

7.1 Global

7.1.1 Specific data collection

Population of the Ship Strikes Database is high priority for IWC. There should be an effort to increase submissions to the Ship Strikes Database on a global scale. This could be done by targeting places where it is known or suspected that there are ship strikes which are not being reported to the database. The IWC Secretariat could be asked to contact relevant organisations to encourage submissions to the database. On a more immediate level the database could be displayed more prominently on the IWC website to make sure it can be easily found.

There is a need to **recommend** that individual countries (i.e. Contracting Governments to the IWC) get involved. This was especially emphasised in the discussions of IMO (see Item 6.2.3) as any documents submitted to this organisation would need to have a sponsor or group of sponsors associated with it. The IWC could also officially approach non-member governments from e.g. Sri Lanka or Canada. There has been interest from both of these areas – a delegate from Sri Lanka was planning to attend this Workshop, and the DFO in Canada is aware of the database.

During discussion it was noted that ship strikes may not be being reported as there is a lack of simple methods for doing so for some areas or a lack of the appropriate detecting infrastructure to do so. The Workshop **re-emphasised** that there are many ways to submit data on ship strikes, e.g. via existing stranding networks or institutions involved in cetacean research (such as ARAP), as well as directly to the IWC Ship Strikes Database, which is being upgraded to *inter alia* improve submission methods.

Any future IMO proposal should draw attention to the IWC Ship Strikes Database and encourage submission of reports to it. It was suggested that one route to be explored was to emulate a recent policy in the airline industry where as an incentive to report a 'near miss' with another plane the pilot was promised amnesty from prosecution. However, although the idea was considered to have some merit, in many cases a whale collision is not the fault of the captain or pilot of a ship anyway, and the industries would not support a measure which appeared to increasingly blame them for accidents.

7.1.2 Targeted (effective) outreach

There is a need to approach vessel operators directly with regard to the danger to vessels of hitting cetaceans. To do this contacts in the industry are needed. Some delicacy is needed with the initial approach and negotiations, e.g. ferry companies may not want to advertise that they might hit whales during passenger transits. Companies need to be persuaded that reporting cetacean strikes will ultimately improve the safety of their operations.

One approach could be to use existing strandings networks. The IWC SC sub-committee on environmental concerns has provided advice to stranding networks on this issue in the past. There is also a Stranding Expert Group within the SC and a partial list of stranding networks around the world has been assembled. Recent entanglement training workshops involving these networks in the Caribbean area have been well-received. In addition the SPAW has been building stranding network capability. They were unaware of the IWC stranding network list until recently. Resources such as this list need to be made more prominent.

Ritter presented Ritter *et al.* (2014). Collisions between sailing vessels and cetaceans have been reported for a number of species, and this appears to be an increasing problem (Ritter, 2009). Many of these collisions have caused serious damage to the vessel or even vessel loss, as well as serious or fatal injury to the whale. This document was developed to provide information on the ship strike issue to sailors and regatta/offshore race organisers as well as to highlight mitigation options. The document highlights that in the absence of sufficient information on effective technological solutions, current options for reducing risk are limited to avoiding action by the vessel and routing vessels away from areas with large numbers of whales. Routing advice always has to consider what data are available regarding whales, i.e. which species present the greatest collision risk, what their behavioural characteristics and movement patterns are. Moreover, advice has to be based on oceanographic features and the existence of marine protected areas, etc. Discrete procedures suggested for off-shore sailing races within four subject areas are: (1) collating baseline data, e.g. on seasonal and temporal patterns of whale distribution and movements, seasonal migration and large oceanographic and physiographic features; (2) route planning (which ideally should take place at the planning stage of the event) including allowing for the concept of physical or virtual marks defining the race route or to allow for as wide a time window as possible in order to coincide with seasons when whale density is likely to be lowest; (3) informing sailors, about areas where whales are most likely to be encountered, providing general advice on cetacean species, preparation of briefing materials, etc.; and (4) reporting, with an emphasis on making use of the IWC global database. The document lists known ship strike mitigation measures, educational resources, reporting tools and websites relevant for sailors and sailing race organisers.

In discussion it was noted that WWF is starting to collaborate with the organisers of the Global Ocean Race, IOC, and the Swedish Government. Ritter and Panigada will join this collaboration as IWC ship strikes coordinators in an advisory role. This role should be formalised as an official IWC collaboration.

Panigada summarised Ritter and Panigada (2014) which is the SC's draft guidelines for cruise ship operators. Collisions between cruise ships and cetaceans have been reported for a number of species, with large whales being the most commonly reported hit. Many of these collisions have caused serious or fatal injury to the whale. Only a very small proportion of collisions are likely to result in the whale becoming stuck on the bow of a ship, but these are the ones that get noticed. The ship strike data coordinators established a number of contacts with the cruise ship industry and felt that producing a guidance document would be welcome, not the least because whales struck by cruise ships receive considerable media attention, thus having a potential negative impact on the cruise company. Ritter and Panigada (2014) was developed to provide information on the issue for cruise line operators as well as to highlight mitigation options. The document sets out some general information on the issue and highlights that in the absence of sufficient information on effective technological solutions, current options for reducing risk are limited to avoiding action by the vessel, reducing cruising speeds, and routing vessels away from areas with large numbers of whales. The document follows a similar format to the guidance for off-shore recreational boating events with information on seven main subject areas:

(1) collating baseline data before voyage planning, to identify potential cetacean hot spots;
(2) route planning to avoid such areas and to comply with speed restrictions;
(3) informing captains, crew and staff about species most likely to be encountered, providing briefing materials on what to do and look for in the event of a collision;
(4) operational measures including reducing speed, avoidance manoeuvres, and advice on what to do if a collision has occurred;
(5) operational guidelines during whale watching activities;
(6) technological solutions; and
(7) reporting, with an emphasis on making use of the IWC global database.

It was noted that this document does not take into account the important fact that most cruise ships travel mainly at night. There will be more of these guidelines documents produced for other types of vessel.

In discussion it was noted that there is a need to decide how to distribute these two documents. Use could be made of the people participating at this Workshop.

The information needs careful targeting so that it is seen by the right people. It was suggested that much of the advice is generic and there could be a one-page summary, perhaps laminated, with specific advice targeted at individual industries. This could take the form of a flash card with salient points to keep on the bridge. A longer document could be produced for distribution to industries and one portable, laminated page for captains.

Cruise lines were chosen in the first instance because this industry seemed to be more open than some others to working on the ship strikes issue. In general the more collaboration that can be achieved the more successful the end result will be (e.g. the TSSs at Stellwagen Bank).

It was also noted that a guidance document needs to show ship's captains where to get information on whale distribution and what they are supposed to do to avoid whales. It was noted that this is a difficult issue to give advice on.

Couvat reported that there has recently been an IMO workshop on renewing the Polar Code. Ship strikes were mentioned at this workshop as Recommendation 24. This stipulated that voyage planning should be mandatory and cetacean hotspots should be crossed at reduced speeds.

7.1.3 Important Marine Mammal Areas (IMMAs), Marine Mammal Protected Areas (MMPAs) and voyage planning

It was suggested that MMPAs could have speed limits or other rules comparable to the regulations used in National Parks on land. Vehicles that enter land-based or marine protected areas may be recreational or commercial. On land, parks are able to manage the disparate users of commercial or transiting vehicles as well as recreational users. The same could be done inside MMPAs. National Parks have simple warning signs about animals (e.g. deer, frogs, etc.) to make people travelling through the area aware of their surroundings, promoting a 'go slow' ethic, and MMPAs could attempt something similar. It was noted that the Stellwagen iPad app functions along these lines. It was estimated that there are around 500 MMPAs whose managers could be approached.

The Workshop **recommends** that the IUCN Marine Mammal Protected Area Task Force (MMPATF) investigate the idea of developing a 'go slow' ethic or speed limits for marine mammal protected areas (MMPAs) as an aid to viewing as well as not disturbing marine life, similar to common practice in many land-based National Parks and reserves. 'Signage' could come through maps, apps and other methods of conveying messages to ships both tourist and commercial.

The Workshop **recommends** the following:

- that the MMPATF develop a database to contact the approximately 500 MMPA managers to survey possible concerns about ship strikes, to encourage data reporting for ship strikes to the IWC database, as well as strandings, and to try to gauge if ship strikes are a problem in MMPAs; and
- that the MMPATF investigate MMPA management plans for guidelines, regulations or rules related to ship strike as well as speed concerns for pleasure as well as transiting vessels.

The Workshop also **recommends**, in light of the Important Marine Mammal Areas (IMMAs) criteria under preparation, that the IUCN Marine Mammal Protected Areas Task Force consult the IWC SC for advice before the criteria are finalised. The Workshop **recognises** that the identification of IMMAs could facilitate consideration of high priority areas for ship strike mitigation.

7.1.3.1 MODELLING OF ETP, AND IUCN MMPA TF DRAFT CRITERIA FOR DISCUSSION

The ETP area has exceptional datasets associated with it, and these might be a good place to start with further work testing IMMA criteria. In addition, ecosystem research is being carried out here and could be very helpful in testing the criteria. Noting that the Eastern Tropical Pacific region is a data-rich area, the Workshop **recommends** that the modelling of marine mammal species and ecosystems in this region be utilised to the extent feasible to help test and fine-tune draft criteria for the Important Marine Mammal Areas (IMMAs), and to help develop a draft list of IMMAs for this region.

7.1.3.2 SPECIFIC SHIPPING INDUSTRY/IMO/STAKEHOLDER INPUT

Examples of efforts to engage industry in observing and reporting marine mammals include the Smart Oceans Smart Industries programme of the World Ocean Council (WOC), which is facilitating and scaling up industry data gathering. This could be expanded further to include observation of marine mammals. This would necessarily be opportunistic data, so there are some limits on the use of this, but careful drafting of guidelines right at the start (by the IWC SC) to present to industry would mitigate some of the problems known to be associated with platforms of opportunity.

In discussion of which industries to approach, it was noted again that cruise ships mostly travel in the dark and so would have limited opportunities to observe cetaceans. Cruises to Alaska are an exception as passengers want to see the scenery of the Inside Passage and this could be one area to target. Firms offering day trips could also be targeted. The Southern Ocean Research Programme (SORP) organisation has produced a leaflet aimed at tourists visiting the Antarctic which informs them where to send good quality photos of whales, scars, flukes, etc.

National navies could also be approached, e.g. the Dutch navy have an app for reporting sightings of marine mammals. This could be investigated to see if the shipping industry could use it. The WOC indicated its willingness and ability to engage a wide range of ocean industry sectors with information on the tools, technologies and practices for observing, reporting and avoiding marine mammals.

7.1.4 Advance results of Tenerife meeting

Ritter introduced a recent result arising from the Tenerife meeting. The IWC has identified the Canary Islands as a hot spot for ship strikes. The Canary Islands Cetacean Stranding Net reports an average of two strandings of sperm whales per year with signs of collision (Carrillo and Ritter, 2010). The rate of ship strikes increased in 1998, in coincidence with the introduction of fast ferries in the archipelago and the resulting increase in the number of transits and the average speed of the ferries. There is a trend towards faster ferries in the last decade for all companies. A recent study reports that the actual level of mortality likely exceeds the maximum production rate of the number of sperm whales found in the archipelago (a paper by Fais *et al.* has been submitted to *Biological Conservation* on this topic[4]). In addition to sperm whales, ship strikes involving a further six cetacean species have been recorded in the islands, including several species of rorquals (*Balaenoptera* spp.) and beaked whales (*Ziphius* sp.).

[4]Now published as: Fais *et al.* (2015).

In February 2014, the Cetacean Research Group (GIC) at the University of La Laguna, formed a 'Working Group for the Prevention of Cetacean Ship Strikes'. This working group includes the Canary Islands Government, maritime authorities (Harbour Master, Director of Safety at Sea), Canarias Conservación (from the Canary Islands Cetacean Stranding Net) and the most important companies which run inter-island ferries operating in the archipelago (Armas, Trasmediterranea, Fred Olsen). It also has the support of the Spanish Ministry of Environment. The objective of this working group is to promote the application of mitigation measures. It has started to assess which mitigation measures used elsewhere might be effective and practical in the Canary Islands.

The archipelago is an IMO-endorsed PSSA (Particularly Sensitive Sea Area). Within this area, potential mitigation measures include (but are not restricted to): (i) modification of IMO shipping lines crossing known areas of concentration of sperm whales in the archipelago; (ii) real-time sharing of sighting information among all ships, using the mandatory reporting system CANREP for passing ships, and a dedicated system (e.g. REPCET) for ships routinely using the area; (iii) information to mariners and educative programs in the maritime teaching centres (University and technical schools); (iv) testing of systems to improve the detectability of whales, such as IR detection of blows, which is apparently effective in cold waters (Zitterbart *et al.*, 2013), and needs to be tested in warm waters; (v) identification of discrete areas of importance to apply spatial mitigation or reduce ship speed. These measures will be discussed at the upcoming second meeting of the Group and future meetings.

7.1.5 Outreach at the Canal and other concentration points

Jaen talked about distributing information at the Canal about the new TSS schemes. At present, no information on whales or the existing TSS is passed to ships as they transit the Canal as the TSS was only adopted one month ago, and will be implemented next December. Information will be sent to ships when it is available through the charts and publications publishers. It will be possible to pass on other information as well but there is a need to work out the best way for doing so. The Panama Canal Authority may work with the Smithsonian Institute and with ARAP, to produce a postcard for the bridge as suggested, which will also be given to different agencies and companies. There are also plans to distribute information to students of the Nautical Schools so that younger people coming into the industry will have stronger knowledge of the new rules and recommendations.

7.1.6 Advancing modelling efforts including evaluating mitigation strategies

Aspects of this topic were also discussed under Item 5.1.5.1. A number of potential mitigation methods for vessel strikes have been developed. However, while essential, it is extremely difficult to examine their likely efficacy or cost effectiveness, not the least because of sample size difficulties. Some approaches (e.g. reducing speed, changing routes) are easier to evaluate (e.g. Vanderlaan and Taggart, 2007) than others (e.g. those that alert mariners to cetaceans in an area such as REPCET, passive buoys or the presence of observers). A number of studies have been undertaken to try to model various aspects of vessel/cetacean interactions (Clyne and Leaper, 2004; Frantzis *et al.*, 2014) and the Workshop **agrees** that a concerted effort to develop a broad simulation-based approach is warranted. As part of this process it notes the development of 'simulated whale' datasets held by the IWC SC which were developed as part of the efforts to obtain agreed abundance estimates for Antarctic minke whales; these datasets allow for *inter alia* different whale distributions, swimming behaviour and dive patterns as well as visibility of whales to observers and survey design. Such an approach could be expanded to examine various scenarios associated with the ship strike issue and mitigation measures. While there was insufficient time to explore this issue further, the Workshop **recommends** that the IWC SC establishes an Expert Group to build upon existing approaches with a view to developing a broad simulation framework that could be used to examine the likely effectiveness of various mitigation strategies.

7.1.7 Other

It was noted that the US Navy is very strong on reporting ship strikes and it was suggested that other navies could be approached. This might be something that the IWC's Contracting Governments could do. France has been training crews for ten years on ship strikes, including Navy crews. They are very interested in the topic, and they are willing to record sightings (although not in real time for operational reasons).

7.2 Wider Caribbean

7.2.1 Specific data collection

In Saint Lucia there is a log book/reporting sheet system to report sea turtle activities. Any turtle nesting or other related activities that are reported to the Department of Fisheries are recorded in this logbook which provides data to the WIDEr CAribbean Sea Turtle (WIDECAST) and its range states database. Such a system could be emulated and further developed for marine mammal strandings as part of the region's marine mammal strandings network data collection and reporting; this is part of the Marine Mammal Action Plan. The Workshop **recommends** that a standardised and simple logbook for marine mammal strandings be made available to all stranding networks in the region, especially as it relates to ship strikes and their mitigation.

7.2.2 Targeted (effective) outreach (cruise ship industry, port authorities, yachts and sailboats)

The ship strikes data coordinators have identified a need for more outreach to industry and other organisations in the region to increase submissions to the database. They need names and organisations to approach, for example local stranding networks. SPAW is trying to compile a list of these starting with a list of whalewatching operators. There are several people who could be approached to help with this (e.g. Jean and Thomas). It was noted that there is some reluctance in the wider region to put names on lists in case of future repercussions or large amounts of work being given to tiny organisations who could not cope with it. It is important to inform people about what any requested data is for and to show the results of any work done.

The Workshop **recommends** a proposal by Bédel that a network of country coordinators for marine mammal strandings be developed for the region modelled on the WIDECAST network (a turtle information network) facilitated by dedicated regional coordinators with national focal points (mailing list, sharing guides). The Workshop also **recommends** that the SPAW RAC continue to promote stranding networks for the countries of the Wider Caribbean Region.

7.2.3 Sanctuary Network actions

MacDonald introduced the 'sister sanctuary' concept. NOAA's Stellwagen Bank National Marine Sanctuary

(SBNMS) and its Caribbean partners have developed a Sister Sanctuary Program (SSP) that emphasises the critical need to take a broader management view toward transboundary conservation of marine mammal species by providing critical support for a shared population of (in this case) almost 1,000 individual humpback whales, which spend the spring and summer in the rich feeding grounds of SBNMS in the Gulf of Maine before heading south in the late autumn to the warmer waters of the Caribbean Sea to mate and give birth to their young.

In December 2006, the first Sister Sanctuary linkage protecting an endangered migratory marine mammal species on both ends of its range was established between SBNMS and the Dominican Republic's Marine Mammal Sanctuary. In 2011, this was expanded to include a sister sanctuary partnership between SBNMS and the AGOA Marine Mammal Sanctuary in the French Antilles; and, in 2012, the Government of Bermuda joined the SSP to help protect humpback whales along the migratory corridor between SBNMS and the Caribbean.

Formal plans are currently underway between SBNMS and the Dutch West Indies wherein the waters of the EEZ around the islands of Saba and St Eustatius will be legally designated a Sanctuary for marine mammals (planned for 2014) and a Sister Sanctuary partnership will follow. Through these collaborative actions, the SSP partners are forming the first international Marine Mammal Protected Areas Network under the framework of UNEP's Caribbean Environment Programme and its Specially Protected Areas Wildlife Programme (SPAW), which is supported by the SPAW Regional Activity Center in Guadeloupe.

The Workshop **recommends** that the Marine Mammal Sanctuary network in the region develop and share expertise for expanded surveys and telemetry to understand inter-island movements and habitat use of migratory and resident populations of whales, in particular as it relates to shipping and strikes. The Workshop also **recommends** that the sanctuaries continue to share educational materials, especially on the current topic, where appropriate.

The Workshop **recommends** that existing (and any future) Sanctuaries in the region enter into partnership network agreements as appropriate.

Although it is difficult and sometimes costly to do so, it is important that under these partnerships any photo-identification catalogues and photographs are shared; data sharing dramatically increases the value of photo-identification data. The Workshop **recommends** that photo-identification catalogues are shared and contribute to central catalogues where available (e.g. the North Atlantic Humpback Whale Catalogue administered by the College of the Atlantic).

7.2.4 Identifying high risk areas where it may be possible to re-route shipping or restrict speeds

As is apparent from the earlier discussions, as yet there are insufficient data to identify high risk areas within the region. Recommendations on how to improve this situation are given under Item 5.2.4.

8. PRIORITY RECOMMENDATIONS AND ACTIONS

8.1 Overall conclusions

The Workshop **reiterates** the findings of the Beaulieu Workshop in recognising the variety of reasons that the IWC and others are interested in the issue of ship strikes ranging from animal welfare and human safety through to population level threats (see Annex E for a summary of recommendations from the Beaulieu meeting). All are important. These different perspectives can in some cases lead to different approaches to the issue and assignment of priorities. From an animal welfare perspective, ship strikes are always a problem and it is clear that they occur in most regions of the world although reporting is patchy and represents minimum numbers. From a conservation perspective, the Workshop **agrees** that apart from for certain very small populations (e.g. western North Atlantic right whales, eastern North Pacific right whales, southeastern Pacific right whales, Arabian Sea humpback whales, western gray whales, blue whales off Sri Lanka and sperm whales in the Canary Islands) where even small numbers of mortalities due to ship strikes are problematic, for most large whales there is insufficient knowledge to evaluate the extent to which ship strikes constitute an important threat at the population level. From both perspectives, the Workshop therefore **concludes** that the highest priority for the IWC at this time is to place emphasis on the collection and reporting of data to the IWC Global Ship Strikes Database which will both: (1) facilitate a proper evaluation, prioritisation and monitoring of ship strikes as a threat to various populations and regions; and (2) assist in the development of mitigation measures. Associated recommendations to improve reporting and data collection, including those relating to stranding networks, are given under Items 8.2 and 8.3.

In tandem with this effort, the Workshop **recognises** the importance of the species distribution modelling exercises (where sufficient data exist) to identify the important areas for cetaceans at appropriate temporal and geographical scales to compare with potential threats, including ship strikes; where insufficient data exist efforts to obtain this at the regional level are essential. This information is required both to evaluate and prioritise efforts as well as to assist with mitigation and monitoring measures. Associated recommendations are given under Item 5.1.5.2.

With respect to mitigation measures, the Workshop **agrees** that those that separate whales from vessels (or at least minimise co-occurrence) in space and time to the extent possible are the most effective, where this is possible (e.g. routing schemes). The Workshop **emphasises** that the most effective and only demonstrated general method to ameliorate lethal strikes available at present is reduced speed (see Item 6.1.2). The efficacy of other measures (e.g. alerting mariners that whales may be in the area, such as having observers onboard or systems such as REPCET) including technical solutions, requires careful evaluation before they can be endorsed. At present, apart from recommending that vessels go slowly, it is not possible to provide advice on simple avoidance strategies in the presence of whales. Associated recommendations are given under Item 6.

8.2 Global recommendations

8.2.1 IWC Co-operation with the International Maritime Organisation

The Workshop **emphasised** the global distribution nature of the ship strikes problem and **re-affirms** the primacy of the IMO as the competent international organisation responsible for vessel routing measures and the need for the IWC to work with the IMO on this issue.

In this context, the Workshop **recommends** that the IWC maintains and develops a close relationship with the IMO. To establish a presence at and to build a long-term working relationship with the IMO, the IWC Secretariat (or its representative, who could be a representative from

a member state of IWC and IMO) should routinely attend relevant sessions of the IMO's Marine Environment Protection Committee (MEPC) and other appropriate IMO committees and sub-committees. The IWC already has an agreement of co-operation with the IMO dating from 2009; the IWC should take advantage of and build on this existing relationship (e.g. notifying member countries of relevant agenda topics, assisting member nations with the process of submitting national proposals).

More particularly, the Workshop **recommends** the submission of a 'Substantive Document' to MEPC. The IWC Secretariat should submit the document (perhaps under the 'report from other organisations' agenda item or under the 'other' agenda item) to MEPC 68 in May 2015. The document should provide the report of the present Panama Workshop including a summary of its relevant outcomes. The document should also provide results of recent scientific studies regarding the issue of ship strikes of large whales; descriptions of the measures used to reduce the occurrence of fatal strikes and their relative effectiveness; and any other relevant information. The report should be accompanied by a request to the IMO Secretariat to allow the IWC to make a presentation about the goals, mission, and function of the IWC and ship strikes contemporaneous with the introduction of the document in Plenary.

In addition, the document should:

(a) reference previous submissions to the IMO on this matter;
(b) reiterate the concerns about ship strikes of cetaceans worldwide;
(c) describe the function and importance of the IWC's global 'ship strike database';
(d) provide specific information on how to report the occurrence of a ship strike of a whale; and
(e) request that the MEPC: (i) bring this information to the attention of Member Governments and international organisations for action; and (ii) urge IMO members to report ship strikes to the IWC global ship strikes database.

The document should be drafted and formally submitted by the IWC, ideally co-sponsored in particular by a number of interested Member States as well as relevant intergovernmental and non-governmental organisations.

To be considered at MEPC 68, the document (six pages or less) must be submitted to the MEPC no later than March 2015. A draft should be prepared in adequate time to allow for adequate review and consideration by member states for co-sponsorship. The IWC could also consider submitting the document to both the MEPC and the Safety of Navigation Sub-Committee back to back, to reach a wider audience at the IMO.

With respect to routing/traffic separation schemes, the Workshop **recommends** that an appropriate mechanism be developed with IMO to encourage consideration of cetaceans when new or revised routing schemes are brought to IMO. The Workshop **also recommends** that for any such schemes, stakeholders be engaged from the beginning and consulted often and regularly throughout the process.

8.2.2 Important Marine Mammal Areas (IMMAs, MMPAs) and voyage planning

The Workshop **recommends** that the IUCN Marine Mammal Protected Area Task Force (MMPATF):

(1) investigates the idea of developing a 'go slow' ethic or speed limits for marine mammal protected areas (MMPAs) using maps, 'apps' and other methods of conveying messages to ships;
(2) develop a database of the approximately 500 MMPA (marine mammal protected areas) managers to facilitate contact with them in a systematic way with respect to: data reporting for the IWC ship strikes database, as well as strandings; concerns they may have about ship strikes, to gauge if ship strikes are a problem in MMPAs;
(3) investigate Marine Mammal Protected Area (MMPA) management plans for guidelines, regulations or rules related to ship strikes for transiting vessels as well as vessels based in the area (including pleasure craft); and
(4) in light of the IMMA criteria under preparation, consult the IWC SC for advice before the criteria are finalised.

Noting that the Eastern Tropical Pacific region is a data-rich area, the Workshop **recommends** that the modelling of marine mammal species and ecosystems in this region be utilised to the extent feasible to help test and fine-tune draft criteria for the Important Marine Mammal Areas (IMMAs).

8.3 Wider Caribbean (UNEP-CEP-SPAW)

8.3.1 Collaboration

The Workshop **endorses** the development of an MoU between the SPAW Marine Mammal Action Plan (MMAP) Secretariat and the IWC Secretariat on the exchange of information.

The Workshop **recommends** building on recent CPPS cooperation with the IWC (i.e. the entanglement response training) and expanding it to include working with the IWC SSWG and the Scientific Committee regarding exchange of information, networking and mitigation measures to reduce collision risk.

The Workshop **recommends** that organisations within the region should continue to promote information about the existing databases and the use of them at a global and regional level (e.g. the IWC Ship Strike Database, the North Atlantic Humpback Whale Catalogue, etc.).

8.3.2 Improved knowledge of cetacean distribution and abundance

As noted under Item 5.2.4, while data on shipping in the Wider Caribbean area is fairly extensive and readily available, it was agreed that data on marine mammal abundance and distribution are extremely limited in the Wider Caribbean. The Workshop **recognises** the logistical and financial difficulties inherent in undertaking the 'ideal' research programme, i.e. a major synoptic survey covering the whole region to provide a baseline for the region upon which to begin to evaluate and prioritise all potential threats, not just ship strikes. However, as part of a strategy to develop a practical way forward (as was the case for the ACCOBAMS Survey Initiative), it **recommends** that a regional expert group be established to examine and develop a number of (not mutually exclusive) options and overall strategy for obtaining better quantitative data including:

(a) the appropriate use of opportunistic effort (e.g. on vessels crossing the region, including whalewatching vessels) to inform options (b) and (c);
(b) the use of spatial modelling approaches using data from 'potentially appropriate regions' elsewhere in conjunction with the limited information available within the region to suggest areas upon which to base smaller systematic effort; and
(c) the development of a costed proposal to undertake a suitable baseline survey or surveys for the wider region which may focus on particular priority species and methods (e.g. visual, acoustic, mark-recapture).

The Workshop **recommends** that UNEP-CEP-SPAW implement actions in the Marine Mammal Action Plan (MMAP) aimed at identifying areas where long-term photo-identification catalogues of sperm whales and other cetaceans populations exist and encourage the holders of such data to share information and collaborate to produce information on movements, structure and, where possible, abundance estimates.

The Workshop also **recommends** that the SPAW RAC continue to promote stranding networks for the countries of the Wider Caribbean Region. It **recommends** that a standardised and simple logbook for strandings be made available to all stranding networks in the region, especially as it relates to ship strikes and their mitigation.

The Workshop **recommends** that a network of country coordinators for marine mammal strandings be developed for the region modelled on the WIDECAST (Wider Caribbean Sea Turtle Conservation Network), facilitated by dedicated regional coordinators with national focal points (mailing list, sharing guides).

8.3.3 Vessel traffic and ship strikes

The Workshop **recommends** that SPAW acquire real time and historical ships track data for the Caribbean (AIS, LRIT, etc.) and the technical expertise to process it.

The Workshop **recommends** that SPAW and its member countries investigate the best means to passively and actively inform commercial ships, recreational boaters, and other maritime interests, when a voyage enters a Sanctuary or Marine Protected Area.

The Workshop **recommends** the identification and utilisation of existing data on ship strikes collected by, for example, the shipping industry for the safety of their operations and passengers (e.g. ferries) and **encourage**s the industry in all countries within the region to collect such data and report it to regional bodies and the IWC ship strikes database.

8.3.4 Targeted actions and outreach for identified hotspots

The Workshop **commends** the work undertaken thus far on one of the best long-term datasets in the world for habitat modelling in the Eastern Tropical Pacific. It noted the potential of using this dataset to explore certain generic questions including the relationship between reliable predictions and, for example, length of datasets and/or geographical extent of datasets. It **recommends** investigation of these issues by 'censoring' the datasets in various ways and comparing the reliability of the predictions against those from the full dataset. Similarly, it **recommends** exploration of the relationship between use of presence/absence data and presence-only data.

8.3.5 Priority actions for Marine Mammal Sanctuary Network

The Workshop **recommends** that existing (and any future) Sanctuaries in the region enter into a partnership network agreement.

The Workshop **recommends** that the Marine Mammal Sanctuary Network in the region:

(1) develops and shares expertise for expanded surveys and telemetry to understand inter-island movements and habitat use of migratory and resident populations of whales, in particular as it relates to shipping and strikes;
(2) continues to share educational materials, especially on ship strikes, where appropriate;
(3) promotes the sharing of photo-identification catalogues between networks and encourages contributions to central catalogues where available (i.e. the North Atlantic Catalogue).

8.4 Priority actions for IWC

8.4.1 Collaboration

The recommendations under Items 8.2.1 and 8.3.1 highlight collaboration with IMO, UNEP-CEP-SPAW and CPPS. In addition, the Workshop **commends** the IWC's current cooperative work with IGOs and NGOs and **recommends** that it expand the work with regional organisations, NGOs and IGOs (e.g. CPPS, SPAW and other UNEP Regional Seas programmes) on the ship strikes issue. The Workshop notes that some organisations have databases on cetaceans, experts and well-established communication mechanisms with member countries. The Workshop **recommends** that the IWC works with both Parties and non-Parties of IWC on the issue of ship strikes, as well as assisting with training programmes on marine conservation that may help to increase awareness on the issue (including the IWC ship strike database), improve the quality of population and marine spatial analyses for the species, promote regional networking and advance the goals of the IWC on this issue.

In addition to IMO, the Workshop **strongly recommends** that the IWC increases its engagement with the maritime sector (e.g. shipping associations, and other maritime user groups and associations such as the World Ocean Council, which has offered to assist in engaging the diverse ocean business community on the issue of ship strikes).

8.4.2 Five-Year Strategic Plan on Ship Strikes

The Chair noted that work to prepare the Five-Year Plan was going ahead through the IWC Conservation Committee's Ship Strikes Working Group, and that the results of this Workshop would be helpful and included in the Plan where appropriate.

8.4.3 IWC Ship Strikes Database

The Workshop **affirms** that the IWC Ship Strikes Database is a crucial tool in addressing the issue of ship strikes around the world. Populating the database is a high priority in terms of assessing priorities. The Workshop **strongly recommends** that:

(1) IWC member countries place greater emphasis on publicising the database and the need to report ship strike data directly into it within their countries, including from relevant government departments (e.g. the navy and coast guard) as well as maritime users in general;
(2) IWC member countries all submit relevant information to the Scientific Committee including through national Progress Reports;
(3) the IWC continues to fund the ship strikes database co-ordinators and that the co-ordinators continue to publicise the database; and
(4) the IWC increases its efforts to publicise the database to other intergovernmental and regional organisations, as well as all parts of the maritime sector.

8.4.4 The IWC Scientific Committee

The Workshop **recognises** the expertise of the IWC Scientific Committee with respect to many aspects of the ship strikes issue. It has highlighted a number of areas for which the Committee can provide advice to other organisations including IUCN (Item 8.2.2) and CPPS (Item 8.3.1). The Workshop **agrees** that the IWC Scientific Committee should continue to provide advice and collaborate with other organisations and research groups on matter related to ship strikes and encourages the submission of relevant work to the Committee.

The Workshop highlighted two areas where Scientific Expertise could prove extremely valuable.

(1) While there was insufficient time at the Workshop to explore the use of simulation modelling to examine potential mitigation measures, as discussed under Item 7.1.6, the Workshop **recommends** that the IWC Scientific Committee establishes an Expert Group to build upon existing modelling approaches with a view to developing a broad simulation framework that could be used to examine the likely effectiveness of various mitigation strategies.

(2) The Workshop **commended** the work undertaken thus far on one of the best long-term datasets in the world for habitat modelling in the Eastern Tropical Pacific. It noted the potential of using this dataset to explore certain generic questions including the relationship between reliable predictions and, for example, length of datasets and/or geographical extent of datasets. It **recommends** investigation of these issues by 'censoring' the datasets in various ways and comparing the reliability of the predictions against those from the full dataset. Similarly, it **recommends** exploration of the relationship between use of presence/absence data and presence-only data. It **agrees** that presentation of this work to the Scientific Committee could prove mutually valuable to the scientists undertaking the work (e.g. Redfern and colleagues) and to the Committee's work.

8.5 Other possible priority actions

The Workshop **agrees** that further studies using D-tags applied to whales in or near shipping lanes off major ports may represent the best opportunity to correlate reliable data on whale behaviour and response (or lack thereof) with ship speeds available through AIS records during close approaches by ships. Such information may be of broad value in considering mitigation measures, including TSSs. The Workshop **recommends** that further studies using D-tags be considered and the information shared.

9. OTHER RELEVANT TOPICS

There were no other topics discussed at the Workshop.

10. REVIEW AND ACCEPT REPORT

The report was provided to participants to review on 30 June 2014, and was adopted 'by post'.

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Annex A

List of Participants

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Annex B

Agenda

1. Introductions
2. Confirm Chair and rapporteurs
3. Review and adopt Agenda
4. Background and context (IWC and UNEP-CEP)
5. Summary of current information and data gaps
   - 5.1 Global
     - 5.1.1 Lessons from the 2010 Joint IWC/ACCOBAMS Workshop
     - 5.1.2 Objectives of IWC database and ways the data may contribute to the Workshop
     - 5.1.3 Identified data gaps in addressing ship strikes worldwide (e.g. understanding factors that most contribute to risk such as vessel speed, size and type)
     - 5.1.4 Shipping and other stakeholder perspective
     - 5.1.5 High risk areas and species
       - 5.1.5.1 Modelling approaches including shipping and whale data with global implications or applicability
       - 5.1.5.2 MMPAs and IUCN-IMMAs
     - 5.1.6 Other
   - 5.2 Wider Caribbean region
     - 5.2.1 Existing information on ship strikes
     - 5.2.2 Shipping and other stakeholder information
     - 5.2.3 High risk areas and species
       - 5.2.3.1 Caribbean (LifeWeb, UNEP-CEP, RAC REMPEITC)
       - 5.2.3.2 The use of models: the ETP example (LifeWeb, UNEP-CEP, NOAA)
       - 5.2.3.3 Country specific information
     - 5.2.4 Data gaps in the wider Caribbean on whale and shipping distribution (group discussion)
6. Summary and evaluation of existing mitigation actions
   - 6.1 Global and other non-Caribbean
     - 6.1.1 Technological
     - 6.1.2 Operational
     - 6.1.3 Legal and voluntary
     - 6.1.4 Summary of potential impacts and concerns for shipping
   - 6.2 Wider Caribbean region
     - 6.2.1 SPAW marine mammal action plan
     - 6.2.2 UNEP-CEP spatial modelling?
     - 6.2.3 Panama TSS proposal
     - 6.2.4 CPPS eastern South Pacific
     - 6.2.5 Other countries
7. Discussion of potential actions
   - 7.1 Global
     - 7.1.1 Specific data collection
     - 7.1.2 Targeted (effective)
     - 7.1.3 Important Marine Mammal Areas (IMMAs, MMPAs) and voyage planning
       - 7.1.3.1 Use modelling of ETP, and IUCN MMPA TF draft criteria for discussion
       - 7.1.3.2 Specific shipping industry/IMO/stake-holder input
     - 7.1.4 Advance results of Tenerife meeting
     - 7.1.5 Outreach at the Canal and other concentration points
     - 7.1.6 Other
   - 7.2 Wider Caribbean
     - 7.2.1 Specific data collection?
     - 7.2.2 Targeted (effective) outreach
     - 7.2.3 Sanctuary network actions
     - 7.2.4 Advancing spatial monitoring
     - 7.2.5 Identifying high risk areas where it may be possible to re-route shipping or restrict speeds
8. Priority recommendation and actions
   - 8.1 Global
     - 8.1.1 Technological
     - 8.1.2 Operational
       - 8.1.2.1 Important Marine Mammal Areas (IMMAs, MMPAs) and voyage planning
       - 8.1.2.2 Use modelling of ETP, and IUCN MMPA TF draft criteria for discussion
     - 8.1.3 Educational tools
       - 8.1.3.1 Shipping industry/IMO/stakeholder input priority education tools
       - 8.1.3.2 Advance results of Tenerife meeting
       - 8.1.3.3 Outreach at the Canal?
   - 8.2 Wider Caribbean (UNEP-CEP-SPAW)
     - 8.2.1 Marine mammal action plan items
     - 8.2.2 Targeted actions and outreach for identified hotspots
     - 8.2.3 Priority actions for MM Sanctuary Network
   - 8.3 Priority actions for IWC
     - 8.3.1 Ship Strike Five-Year Strategic Plan
     - 8.3.2 IWC Ship Strike Database
     - 8.3.3 IMMAs
   - 8.4 Other possible priority actions
     - 8.4.1 Assisting voyage planning (IMMAs, MMPAs)
     - 8.4.2 Education (IGO and national role)
     - 8.4.3 New technology
     - 8.4.4 Other
9. Other relevant topics
10. Review and accept report

Annex C

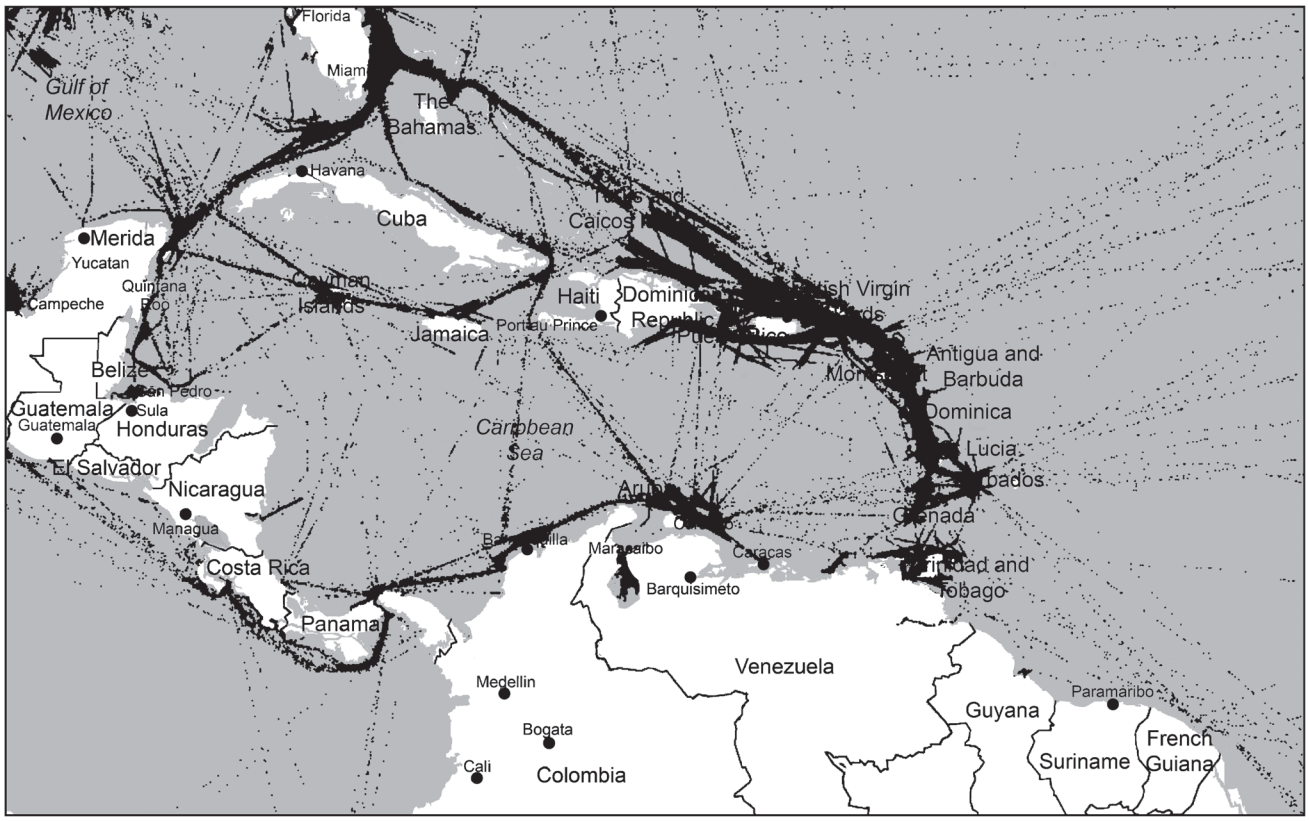
List of Acronyms

ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, the Mediterranean Sea and Atlantic Contiguous Area
ARAP	Autoridad de los Recursos Acuaticos de Panama
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas
AWMP	Aboriginal Whaling Management Procedure
AIS	Automatic Identification System
ATBA	Areas To Be Avoided
CEP	Caribbean Environment Programme
EMSA	European Maritime Safety Agency
ETP	Eastern Tropical Pacific
IAATO	International Association of Antarctic Tour Operators
ICS	International Chamber of Shipping
IMMA	Important Marine Mammal Area
IMO	International Maritime Organization
IMO-MEPC	IMO's Marine Environment Protection Committee
IMO-STCW	IMO's Standards of Training, Certification and Watch keeping
ISAF	International Sailing Federation
IWC	International Whaling Commission
LRIT	Long Range Identification and Tracking
MMPA	Marine Mammal Protected Area
MMAP	Action Plan for the Conservation of Marine Mammals (UNEP)
MSRS	Mandatory Ship Reporting System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
REMPEC	Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
REPCET	REal-time Plotting of CETaceans
RMP	Revised Management Procedure
SPAW	Protocol Concerning Specially Protected Areas and Wildlife
SSWG	Ship Strikes Working Group
TSS	Traffic Separation Scheme
UNEP	United Nations Environment Programme
USCG	United States Coast Guard

Annex D

Regional Passenger Ship Routes in the Wider Caribbean Area

Robert Griffiths



Marine Traffic, June 13, 2014

Annex E
Recommendations from the Ship Strikes Workshop at Beaulieu, 21-24 September 2010

Originally prepared by the Government of Belgium for the IWC/63 Annual Meeting (IWC/63/16[1])

Recommendations/measures	Prop. time line	Possible stakeholders	Prop. priority	Fund need	Rep. page
Scientific					
Data requirements					
Cetacean abundance, density, movements and stock structure data collection	Short/medium	Contracting Governments	High	YES	4
Basin-wide survey in ACCOBAMS Area waters	Short	Italy	High	YES	4
Stranding networks					6
Necropsies (validation studies for fat emboli using lung tissue)	Short/medium	Univ. of Las Palmas/others	-	YES	6
Standardisation of protocols	Short/medium	Contracting Governments	High	YES	6
Training in forensic methods	Short/medium		-	NO	6
Establish basin wide Stranding Network in Mediterranean	Medium	ACCOBAMS members	High	NO	6
Investigate use of drift models, incl. Identifying data gaps	Medium	IWC SC/USA	-	?	7
Encourage reporting carcasses (relevant to chapter 5 of IMO's SOLAS Convention)	Short	IMO member states	-	NO	7
Direct observations					
Encourage reporting of collisions to IWC database	Short	Contracting Governments	High	NO	7
Dedicated observers in high risk areas	Short/medium	Contracting Governments	-	YES	8
Reporting of near misses (incl. clear definition)	Short/medium	Contracting Governments	-	NO	8
Risk analyses					9
Collaboration between cetacean and shipping experts	Short	IWC SC	-	YES	12
Shipping and whale data overlay	Medium	IWC SC	-	YES	12
Creation of risk models (incl. speed, noise, time of year, …)	Medium	IWC SC	-	YES	13
Shipping-whale data and ship strike fatalities data overlay	Medium	IWC SC	-	YES	13
Reporting					
Encourage reporting of ship strikes to IWC	Short	Contracting Governments	High	NO	20
Further development of IWC centralised database	Short	IWC SC	-	YES	20
Improve collaboration between regional and global databases	Short	IWC data review group	High	NO	20
Achieve mandatory reporting	Long	Contracting Governments/ IMO members	-	NO	20
Strengthening existing stranding networks	Medium	Contracting Governments/ Authorities	-	-	20
Increased training measures of mariners on importance of reporting strikes	Medium	Shipping industry	-	-	20
Determination of Conservation objectives by the appropriate authorities	Medium	Authorities	-	NO	13
Ranking of potential mitigation measures with level of risk at population level	Medium	Authorities	-	NO	13
Quantification of expected risk reduction for any mitigation measure	Medium	IWC SC	-	-	13
Utilisation of IMO guidance document (MEPC.1/Circ.674)	Medium	IMO members	-	NO	13
Potential measures					
ATBAs and re-routing including TSS	Medium	Contracting Governments	High	NO	13
Dynamic management areas	Medium	Contracting Governments	-	NO	14
Evaluation of implementation/compliance	Long	Contracting Governments	-	NO	14
Evaluation of effectiveness	Long	IWC SC	-	-	14
Speed restrictions	Medium	Contracting Governments	-	NO	14
Evaluation of implementation/compliance	Long	Contracting Governments	-	?	15
Evaluation of effectiveness	Long	IWC SC	-	?	15
Dedicated observers and trained crew on board	Medium	Contracting Governments	-	YES	16
Increased training measures and awareness (incl. mariners)	Medium	Contracting Governments/ IMO members	-	YES	16
Land-based observation in high risk areas	Medium	Scientists	-	YES	16
Technological approaches	Long	Shipping industry/NGOs	-	YES	17
Specific cases					
Strait of Gibraltar: reduction of speed	Medium	Spain	High	NO	19
Pelagos Sanctuary: designation of a PSSA under IMO	Medium/long	Pelagos Parties/IMO	-	NO	19
Southwest of Greece: possible routing measures	Medium	Greece	-	NO	19
Canary Islands: dedicated observers on fast and high speed vessels	Short	Canary Islands government	High	?	19
Training and education for observers	Short	Canary Islands government	High	YES	19
Speed restrictions in SACs and high risk areas	Short/medium	Canary Islands government	-	NO	19
Possibly change in routing	Short/medium	Canary Islands government	-	NO	19
Work plan					
Establish a joint Stranding Investigation Working Group (IWC and ACCOBAMS):	Short	IWC and ACCOBAMS	-	NO	20
Review existing protocols and tools for determining the role of human interaction in stranding of cetaceans	Short	IWC SC	-	NO	-
Identify, develop, review and validate tools, techniques and methods to address key issues relative to strandings	Medium	IWC SC	-	-	-
Develop a multidisciplinary approach and methodology to address different experience levels	Medium	-	-	-	-
Develop and implement training	Medium	-	-	YES	-
Built capacity in range states without stranding programmes	Medium	-	-	YES	-
Plan and hold a rangewide stranding coord. meeting for ACCOBAMS members	Medium	ACCOBAMS	-	YES	-
Mediterranean basin-wide survey (summer 2012)	Short	Italy	-	YES	21
Improved reporting to the IWC Global Ship Strike Database	Short	Contracting Governments	-	YES	21
Development of appropriate modelling techniques to identify high priority areas	Medium	IWC SC	-	YES	21
Review of process		IWC SC/CC	-	NO	21

[1]Government of Belgium. 2011. Ship strikes: follow-up on recommendations made and measures identified at the Beaulieu Workshop. Paper IWC/63/16 presented to the Annual Meeting of the International Whaling Commission, July 2011, Jersey, Channel Islands (unpublished). 2pp. [Paper available from the Office of this Journal].

Report of the IWC Workshop on Mitigation and Management of the Threats Posed by Marine Debris to Cetaceans

5-7 August 2014, Honolulu, Hawaii, USA

Report of the IWC Workshop on Mitigation and Management of the Threats Posed by Marine Debris to Cetaceans[1]

CHAIR'S EXECUTIVE SUMMARY

The Workshop was held in Honolulu from 5-7 August 2014. Thirty-four participants from ten countries attended, including several from the Pacific region. The United Nations Food and Agriculture Organisation, the United Nations Environment Programme and its Convention for Migratory Species were all represented, as were relevant industry bodies and a number of non-governmental organisations concerned with marine debris.

The primary objectives of the Workshop were to: (i) explore how the IWC can engage with the existing international and regional mitigation efforts concerning the management of marine debris; (ii) determine how best to ensure those efforts are informed by the growing understanding of the cetacean-specific impacts of marine debris; and (iii) advise on how best the IWC can lead/engage with action in regions where marine debris has the greatest potential impacts on cetacean populations.

The Workshop reviewed initiatives from across the world to address marine debris in general and entanglement of cetaceans in particular, which was viewed as the greatest threat to these animals. These initiatives ranged from high-level agreements between countries to address the issue, to efforts in the field to remove materials directly from the seas and recycle or burn it for energy, to efforts to disentangle whales and other cetaceans snared in netting. The IWC is already highly active in this field and held a workshop on the assessment of marine debris impacts on cetaceans in May 2013 at the Woods Hole Oceanographic Institution and also has a programme of work focused on responding to entangled whales. This initiative was begun by Norway, in partnership with Australia and the USA, and has included workshops in Maui in 2010 and Provincetown in 2011.

Important international initiatives have included *inter alia*:

(a) the 5th International Marine Debris Conference: Waves of Change; Global Lessons to Inspire Local Actions, from which came the 'Honolulu Strategy; A Global Framework for the Prevention and Management of Marine Debris' and Honolulu Commitment;
(b) The 2012 'Manila Declaration', which referenced the Honolulu Strategy and strongly endorsed UNEP GPA's mandate to continue its work on marine litter including the recommendation to create the Global Partnership on Marine Litter (GPML)[2] to promote implementation of the strategy;
(c) The formal recognition of the issue of marine debris at the inaugural UN Environmental Assembly Ministerial Meeting in June 2014;
(d) SPREP's new work on stranded cetaceans and programme of work with the IWC; and
(e) calls for action to reduce the incidental capture of whales in fishing gear at the UN General Assembly (UNGA) and by the Committee on Fisheries (COFI), most recently at its thirty-first session in Rome 2013.

In addition, the Convention on the Conservation of Migratory Species of Wild Animal (CMS) has a new Resolution on marine debris proposed for adoption at its Conference of Parties in November 2014 and the Workshop also took note of the 'Untangled' symposium hosted by World Animal Protection (WAP) in Miami in 2012.

The Workshop received information about a number of topics from the assembled experts and it discussed these and generated a number of recommendations which are outlined below. The focal topics discussed included fishing gear marking, using practices in the USA as an example; potential gear modifications; methods for identifying debris hot spots; modelling approaches; work conducted on other species (principally the work of CSIRO in Australia on risk analysis for ingestion and entanglement in seabirds and turtles); debris ingestion; ALDFG; the role and responsibilities of MARPOL; the Nofir project for recycling fishing gear in Norway and elsewhere; the NOAA Marine Debris Programme and the Hawaii Marine Debris Action Plan; the Korean Gear Buyback Programme; the European Healthy Seas Initiative; the Philippines Net-Works programme; Ghost-Nets Australia; WAP's new Sea Change initiative; and the exemplary outreach work by Northwest Straits Foundation, UNEP and NOAA.

Conclusions and recommendations

The Workshop **emphasised** that the issue of marine debris, while important for cetaceans, was a major environmental issue in its own right that was already the subject of a number of important international and national initiatives and that there is a need for a coordinating body to help bring these initiatives together. Any lack of strong evidence of quantified impacts for some cetacean species for some debris types at present should not preclude efforts to remove existing debris and prevent future accumulation in the marine environment. It also **agreed** that from an animal welfare perspective, the absolute number of cetacean entanglements and the associated suffering and times to death are unacceptable, irrespective of population level effects.

The Workshop **agreed** that the IWC's primary contribution should be to ensure that cetacean-related issues are adequately represented within existing initiatives and that its strong scientific and other expertise is made available in collaborative efforts.

It **strongly recommended as the highest priority** that the IWC and its Secretariat work together with the Secretariats of the other major IGOS and RMFOs relevant to this issue to ensure consistency of approach, synergy of effort and exchange of information to develop appropriate mitigation strategies that recognise that: (a) prevention is the ultimate solution; but that (b) removal is important until that ideal is realised.

Cont.

[1]Presented to the IWC Conservation Committee meeting as IWC/65/CCRep04.
[2]*http://www.stapgef.org/stap/wp-content/uploads/2013/05/STAP-CBD-TS67-Debris-F-Web.pdf.*

It also **recommended** that individual IWC member countries collaborate with such initiatives and that the IWC continues to highlight issues surrounding marine debris and cetaceans.

The Workshop also **recommended** that every effort is made to work with fishing, other relevant industries and NGOs as appropriate.

The Workshop also **recommended** that the IWC (and other IGOs) encourage their member states to review national level implementation of MARPOL Annex V and other conventions relevant to marine debris reduction. The IWC should **encourage** its members to prioritise the strategic use a range of measures to improve marine and terrestrial waste management, including national legislation and policy, stakeholder partnerships, industry training schemes and economic tools aimed at reducing public consumption of key types of debris such as packaging waste.

The Workshop also made specific recommendations for collaboration with IMO (section 8.1.1) and SPREP (8.1.2) and **endorsed** the research recommendations from the previous IWC Workshop on marine debris (IWC, 2013) and the recent Scientific Committee meeting (IWC, 2015), including incorporation of data on marine debris into IWC National Progress Reports in a standard format and development of a global IWC entanglement database.

In addition the Workshop **recommended** that:

(a) a concerted effort be made to collect data using a standard approach that will allow a better assignation of entanglements;
(b) the IWC **encourages** COFI to complete its work on gear marking;
(c) the IWC **encourages** disentanglement and stranding teams to collect detailed information on entangling gear/material that is removed from whales, and on marine debris present in the immediate environment;
(d) the IWC Scientific Committee explores ways of combining estimates of oceanic debris and information on cetaceans to identify priorities for mitigating and managing the impacts of marine debris on cetaceans;
(e) the IWC continues to support and develop its disentanglement network, and carefully considers incorporating the issue of all marine debris into the initial training programme component of the disentanglement training, and **stresses** the importance of involving the local fishing communities in the training;
(f) the IWC promotes and shares the model of expert training/capacity building into existing marine debris initiatives including the Global Partnership on Marine Litter as well as at the national level;
(g) the IWC Secretariat examine ways in which it and its member nations can most effectively communicate the Workshop's recommendations to the relevant target audience(s), including considering highlighting the IWC's work on the impacts of marine debris on cetaceans at meetings of other IGOs, e.g. the forthcoming COFI in 2016; and
(h) the IWC develops improved methods to **encourage** its member nations and others to provide the marine debris related data discussed in this report and to provide progress reports on their work on marine debris as part of their national conservation reports.

Finally, the Workshop **endorsed** the forthcoming IWC Workshop (anticipated March-April 2016) on prevention of the incidental capture of cetaceans. It **agrees** that this should incorporate entangling debris as well as in-use gear. It **reiterates** the importance of ensuring participation of experts from industry and relevant IGOs especially FAO and the Workshop **encouraged** all members and non-members of the IWC to take advantage of the IWC disentanglement network especially in those regions where entanglement represents a threat at the population level (e.g. western Pacific, eastern South Atlantic, and Arabian Sea).

1. INTRODUCTORY ITEMS

The Workshop was held at the Ala Moana Hotel, Honolulu from 5-7 August 2014. The list of participants is given as Annex A.

1.1 Welcoming comments

Mark Simmonds (Convenor), welcomed participants to the meeting, and thanked them for persevering in the face of Hurricanes Iselle and Julio.

Nancy Wallace welcomed everyone to Hawaii on behalf of the hosts, NOAA. She was pleased that the Workshop had a good mix of experts from many different areas to discuss the issue of marine debris. She hoped that the experience of all of these people should bring some strong recommendations from the meeting, which will be taken forward to the IWC/65 meeting in Slovenia in September 2014. This is the second IWC marine debris workshop and she hoped that this one will follow the good work of the first.

Greg Donovan welcomed and thanked the participants on behalf of the IWC. He was especially pleased that so many experts from a variety of backgrounds were able to attend. The Workshop would not have been possible without the financial and practical assistance of a number of organisations in addition to the IWC. As well as thanking NOAA for hosting the meeting, he thanked Ocean Care, World Animal Protection, EIA, Humane Society International, NOAA, the US Marine Mammal Commission and the Government of the United Kingdom for financial assistance.

He emphasised that the issue of marine debris and cetaceans is multi-dimensional and that the IWC recognises that dealing with it requires considerable co-operation amongst intergovernmental organisations, governments, industry and non-governmental organisations. In terms of the contribution of the IWC to this effort, he noted two important areas. The first is the expertise residing within its Scientific Committee, especially in the context of: (a) modelling populations and human activities to determine priorities for action from a conservation perspective; (b) evaluating potential and actual mitigation measures; and (c) long-term monitoring of cetaceans. The second area concerns the welfare of individual animals independently of the conservation status of the population to which they belong; at present the IWC has focussed on entanglement in fishing gear.

He stressed that the present Workshop was aimed at trying to develop: (1) practical conservation and management actions based upon the available evidence; and (2) mechanisms to improve the scientific basis for action where this is lacking. Clearly the Workshop cannot solve the many issues surrounding this issue now but in the time available it is important to try to develop a framework and strategy to focus multidisciplinary international efforts in the future.

1.2 Appointment of Chairs and rapporteurs

The overall Chair was confirmed as Mark Simmonds. Several participants led the discussions for different topics as indicated under the relevant Agenda Items. Cooke, Donovan and Mattila were appointed as rapporteurs. It is important that the report is completed in a timely manner for presentation to and consideration by the IWC at its meeting in September 2014. It was clarified that the report of the Workshop was a report of the discussion of the participants; the views and recommendations it contains are not necessarily those of their institutions or organisations. Of course the relevant bodies may endorse the completed report if they choose.

1.3 Objectives of the Workshop

The Workshop will:

(a) explore how the IWC can engage with the existing international and regional mitigation efforts concerning the management of marine debris;
(b) determine how best to ensure those efforts are informed by the growing understanding of the cetacean-specific impacts of marine debris; and
(c) advise on how best the IWC can lead/engage with action in regions where marine debris has the greatest potential impacts on cetacean populations.

The Workshop will also provide advice to the IWC with respect to a possible future Conservation Management Plan (CMP) for future work on marine debris.

1.4 Adoption of Agenda

The adopted agenda is given as Annex B. A list of acronyms used is given as Annex C.

1.5 Available documents and list of acronyms

Documents were distributed in advance of the meeting and made available on the One Drive online system. A list of documents made available to the Workshop and/or cited in this report is given as Annex D.

1.6 Review of previous IWC work

1.6.1 Overview of the first IWC workshop on marine debris and review of progress of recommendations

The IWC Scientific Committee's sub-committee on environmental concerns has been receiving information on entanglement and ingestion of marine debris for several years. The issue has been growing in importance in recent years, led by such people as David Laist, a participant at the present Workshop. Simmonds provided an overview of the report of the first IWC Workshop on Marine Debris which was held at the Woods Hole Oceanographic Institution in May 2013 (IWC, 2014a). Thirty-eight participants from eight countries had attended.

In summary, Simmonds concluded that the Woods Hole Workshop was successful and had identified the scale of the marine debris problem and the need for improved international cooperation. The issue of microplastics was particularly mentioned. The workshop had recommended that industry should be involved in solving the issue and had made a number of recommendations that were endorsed by the Scientific Committee (IWC, 2014b, pp.18-19).

The first Workshop included a public seminar consisting of keynote presentations which illustrated the ways in which debris and cetaceans interact, including the long lingering deaths that can result from entanglement, and a growing realisation that ingestion of plastics (including microplastics) may be a significant problem, and several approaches to evaluating the risk this problem might pose (e.g. Wilcox *et al.*, 2013). It was noted that 280 million tonnes of plastic were produced globally, less than half of which was consigned to landfill or recycled. If current rates of consumption continue, the planet will hold another 33 billion tonnes of plastic by 2050. The keynote presentations also highlighted the need for improved international cooperation.

The first Workshop identified the potentially significant impact that marine debris has on both cetacean habitat and the animals themselves through interactions both with macrodebris (such as fishing gear, plastic bags and sheeting) entanglement and ingestion and through microplastics (such as plastic particles added to cosmetics and the pellet form of raw plastics) and their associated chemical exposures through ingestion or inhalation. While ingestion and inhalation of marine debris may sometimes be lethal, sub-lethal impacts may also occur with long-term negative consequences. Intake of debris may be a problem, both as an individual welfare concern and potentially for some populations and species. More research was encouraged and it was recommended that industry partners be involved in marine debris prevention, research and response to ensure success in reducing marine debris impacts on cetaceans.

The first Workshop made many recommendations and concluded that the IWC Scientific Committee should evaluate the risks of ingestion and inhalation based upon: (1) the spatial distribution of microplastics and macro debris; and (2) the feeding strategies and location of feeding areas of cetaceans. It also recommended that the Scientific Committee prioritise studies of those cetaceans that are likely at greatest risk of ingesting or inhaling macro- and microdebris and associated pollutants (e.g. Fossi *et al.*, 2012).

The IWC Scientific Committee reviewed the report of the first Workshop at its May 2014 meeting and endorsed its recommendations (see IWC, 2014c), including its recommended pathology protocol and the full Scientific Committee **agreed** that:

(1) legacy and contemporary marine debris have the potential to be persistent, bioaccumulative and lethal to cetaceans and represent a global management challenge; and
(2) entanglement in and intake of active and ALDFG (abandoned, lost or otherwise discarded fishing gear) fishing gear and other marine debris have lethal and sub-lethal effects on cetaceans.

The Committee had strongly agreed that marine debris and its contribution to entanglement, exposures including ingestion or inhalation, and associated impacts, including toxicity, are welfare and conservation issues for cetaceans on a global scale and a growing concern.

The Committee had recommended that the Commission and the Secretariat take prompt action to help better understand and address this growing problem, including:

(1) providing data on rates of marine debris interactions with cetaceans into the national progress reports and supporting a second marine debris Workshop (with mitigation and management as its focus);
(2) strengthening capacity building in the IWC entanglement response curriculum and adding information on marine debris;
(3) building international partnerships with other relevant organisations and stakeholders including an effective transfer of information about on-going research and debris-reduction and removal programmes and the international and national marine debris communities;

(4) developing programmes to remove ALDFG gear and schemes to reduce the introduction of new debris; and
(5) incorporating consideration of marine debris into IWC conservation management plans where appropriate and to consider making it the focus of a plan in its own right.

It was noted that the national IWC Progress Reports now include reporting of data on marine debris, entanglement and ingestion, which could be used as the beginning of a wider marine debris database. The issue of CMPs is discussed under Item 8.

1.6.2 Overview of previous IWC whale disentanglement Workshops (Maui 2010; Provincetown 2011)

Mattila provided an overview of two recent IWC Workshops on the topic of large whale entanglement that can occur wherever fishing gear and whales overlap (IWC, 2012; 2013). He noted that, almost since its inception, the IWC had recognised the need to understand and quantify whale bycatch, through the work of its Scientific Committee. Recently, the Commission's Working Group on Whale Killing Methods and Associated Welfare Issues has recognised the sometimes severe welfare issues that can be associated with whale entanglements, as the average time to death for an entangled North Atlantic right whale was estimated to be six months (Moore *et al.*, 2006). Given this, Australia, Norway and the USA proposed a workshop, hosted by NOAA in Maui, in 2010, which looked at the scope and impacts of the entanglement issue, as well as what countries were doing in response, including rescue programs and consideration of euthanasia (IWC, 2012). That Workshop agreed that the issue was both a conservation and animal welfare issue; that it occurs wherever whale distribution overlaps with rope and net fisheries; and that, given its cryptic nature and most country's lack of reporting infrastructure, it is often severely under-reported. The Workshop reviewed existing euthanasia/rapid killing techniques and developed a decision tree for responding to reports of entangled whales. It also produced several recommendations, including the following three priorities:

(1) building capacity for entanglement response in countries where it does not exist;
(2) encourage better and more widespread data collection; and
(3) work toward preventing entanglements.

In order to follow up on the first workshop's success and recommendations, Australia, Norway and the USA proposed a second workshop, hosted by the Center for Coastal Studies in Provincetown, MA, in 2011 (IWC, 2013). That Workshop focused on: updating new information; developing consensus principles and guidelines for safely responding to entanglements; developing a strategy and curriculum for capacity building on the issue; and the formation of an expert advisory group to the IWC. All of these goals were accomplished and the consensus 'principles and guidelines' can be found in English, French and Spanish on the IWC's website[3], along with information about a recent capacity building and the members of the expert group. To date, the IWC, with support from the USA (NOAA), UNEP-CEP-SPAW, SPREP, CPPS, World Animal Protection and other NGOs, along with the support of many of the countries for which training occurs, has provided capacity building training for over 350 participants in approximately 18 countries. A key driver of the work is the need to emphasise the danger to humans of well-intentioned disentanglement attempts by non-trained persons.

[3]*http://iwc.int/best-practice-guidelines-for-entanglement-response*.

In discussion, it was noted that the IWC's capacity building initiative requires that it is undertaken with the approval (and often financial or in-kind support) of the country in which training is taking place. Fisheries, Marine Parks or Environment agencies are often involved in the programme. The trainees, who are chosen by the respective government in light of certain criteria, may be a mix of natural resource personnel, eco-tour operators, fishers, Navy personnel, scientists, etc. With respect to targeting fishers specifically, it was noted that as an individual fisher rarely encounters an entangled whale, they would often prefer to call the 'experts' when necessary. Entanglement can create economic hardship, as whales can destroy gear resulting in the need for gear replacement and lost fishing time. This may be particularly true in artisanal fisheries in developing countries.

The entanglement Workshops both emphasised that prevention and mitigation is a far better solution than disentanglement. However, in smaller populations, e.g. North Atlantic right whales, disentanglement is still important as each individual counts towards the population or species survival. Until there is a preventative solution, people will attempt to release entangled whales, whether it is an artisanal fisher trying to recover his gear, or a well-meaning member of the public. This can have serious negative results for both the rescuer and the whale.

It was noted that the IWC approach to entanglement training has been very successful. It was suggested that the same approach might be replicated for capacity building about marine debris, involving interested people in different countries in the same way to develop national or regional marine debris prevention, removal and general outreach programmes. This is discussed further under Item 8.4.

The present Workshop noted a number of components that a broader marine debris related capacity building programme might contain: (a) establishment of an expert steering committee to guide the development of a national or regional initiative; (b) provision of support staff by national or other concerned international or non-governmental organisations to support training; (c) a compilation and review of relevant literature; (d) identification of successful models and methods already available and the reasons for their success; (e) preparation of curricula and advice for trainers; and (f) holding workshops to train, advise, or otherwise assist staff of national or regional agencies and organisations.

It was noted that in some countries (e.g. USA) fishers are required to have basic equipment on board for releasing protected species when they become entangled. This is particularly true for small cetaceans and turtles, but the guidance does include minimal suggestions when large whales are encountered. While this may correctly emphasise safety it may often lead to an 'incomplete' disentanglement with negative consequences for the whale and future disentanglement efforts by trained personnel.

It was further noted that most documented cases where the material that entangles whales can be determined, involve a wide variety of passive fishing gear that is in use (as opposed to ALDFG), including pots, traps, gillnets, longline, etc. Any rope, net, or other material that can 'wrap', which is suspended in the water column is a potential threat.

1.7 Overview of relevant recent non-IWC meetings

1.7.1 Overview of the 2012 'Untangled' global symposium hosted by WSPA (now WAP) in Miami

Bass described the 'Untangled' report, and the symposium hosted by World Animal Protection (WAP) in December

2012[4]. The report reviewed and synthesised the available published and grey literature describing and quantifying the impact of marine debris on animals, and the symposium provided more than 60 experts in marine debris monitoring and mitigation efforts with a platform to discuss priority problems as well as to propose effective solutions. The solutions identified for the priority problem of ALDFG included the following approaches: legislative (e.g. education/enforcement of MARPOL Annex V, regulatory controls on over-setting of traps); technological (e.g. gear modifications, gear marking); social (e.g. training fishers on safe and humane disentanglement techniques for seals, turtles, etc. and/or making them aware of trained disentanglement experts to call upon in the case of entangled whales); and economic (e.g. fishing for litter/nets schemes, low-cost loans to replace gear more regularly, involvement of the seafood retail sector in meeting some of the costs of mitigation measures, and net deposit/net buy-back schemes).

Each of the three study areas has problems associated with it. Solutions talked about at the symposium included: creation of global entanglement networks; involving marine users; lobbying for fishery best practice to be made law; and the creation of local training networks. It is important to involve fishing communities at all levels. Legislation could be improved. Technology to enable animals to escape and to track missing gear could be used. Training for fishers in how to release entangled animals could be expanded. It was noted that any solutions have to work economically for fishers.

The Sea Change campaign came out of this symposium (see Item 3.1.2.8).

1.7.2 Overview of UNEP, CMS, and CBD activities on marine debris

To further help put the work of international conventions and inter-governmental organisations into context, Thiele presented a short overview of some of the global agreements and progress in addressing marine debris which had taken place over the last three years. In 2011, UNEP and NOAA hosted the 5th International Marine Debris Conference: *Waves of Change: Global Lessons to Inspire Local Actions* (Honolulu, HI) which brought together 500+ experts in marine debris from around the world and across stakeholder groups - from practitioners to policy-makers, to scientists and academia, and from the private sector to the arts community. Outcomes included the *'Honolulu Strategy: A Global Framework for the Prevention and Management of Marine Debris'* and the complementary *Honolulu Commitment*. In January 2012, at the Intergovernmental Review of the Global Programme of Action for the Protection of the Marine Environment from Land based Activities (GPA) in the Philippines, government representatives of 64 countries and the European Commission signed the 'Manila Declaration' which referenced the Honolulu Strategy and strongly endorsed UNEP GPA's mandate to continue its work on marine litter, including the recommendation to create the Global Partnership on Marine Litter (GPML)[5] to promote implementation of the strategy.

During 5IMDC (20-25 March 2011, Honolulu, Hawaii) a workshop was hosted by the Scientific and Technical Advisory Panel (STAP) of the Global Environment Facility (GEF) which brought together industry experts and scientists to work on defining solutions for addressing plastics in the marine environment (see the report on 'Marine Debris as a Global Environmental Problem; Introducing a solutions based framework focused on plastic[6]'). This report was formative in getting the Global Environment Facility (GEF) to incorporate the issue of marine debris, particularly plastics and the emerging issue of microplastics as a priority in their GEF6 Funding Strategy.

Another positive global advancement of the marine debris issue was reached at the UN Conference on Sustainable Development (known as Rio+20), hosted in Rio de Janeiro in June 2012. The final Outcome Document called 'The Future We Want'[7] specifically referenced marine debris and implementation goals of the Honolulu Strategy, which further strengthened UNEP's mandate to work on this important issue. Most recently, at the inaugural UN Environmental Assembly Ministerial Meeting in June 2014, the issue of marine debris was formally recognised in a new UNEP Resolution. This resolution on marine plastic debris and microplastics welcomes the work undertaken by the IWC on assessing the impacts of marine debris on cetaceans and the work of UNEP and CMS and *inter alia* encourages Governments and the private sector to promote the more-resource-efficient use and sound management of plastics and microplastics and encourages Governments to take comprehensive action to address the marine plastic debris and microplastic issue through, where appropriate, legislation, enforcement of international agreements, provision of adequate reception facilities for ship-generated wastes, improvement of waste management practices and support for beach clean-up activities, as well as information, education and public awareness programmes.

UNEP's Regional Office for North America, in partnership with the Natural Resources Defense Council, has also built on outcomes of 5IMDC by working on marine plastic pollution from an upstream, preventative approach, investigating policy and legal solutions that include private sector engagement on topics such as Life-Cycle Management and Extended Producer Responsibility (EPR)[8].

Thiele gave a presentation about the Convention on Migratory Species (CMS) providing a short overview about the treaty and specific recommendations for addressing marine impacts on marine migratory species emanating from a 2014 Marine Debris Assessment Report that was commissioned by the CMS Scientific Council, in response to CMS Resolution 10.4 on Marine Debris which was adopted at COP10. COP11 will take place in Quito, Ecuador this year from 4-9 November 2014 and a new resolution on Marine Debris Management will be proposed (see below). Participants are invited to participate and send in proposals for side events that might help raise attention and support for CMS marine debris efforts.

As background, the IWC and CMS formalised a partnership arrangement in 2001 which established a framework for consultation and information sharing between the Conventions and national institutions of respective contracting parties. She suggested that it might be timely to update and renew that MoU. While the present IWC workshop is focused on marine debris and impacts on cetaceans, CMS works to address marine debris impacts across all affected migratory marine species (marine mammals, seabirds, marine turtles, sharks) covered in CMS Appendix I or II.

[4]The Untangled report and symposium proceedings outlining the full suite of priority problems and proposed solutions can be downloaded at *http://www.worldanimalprotection.org/sea-change.*

[5]*http://www.stapgef.org/stap/wp-content/uploads/2013/05/STAP-CBD-TS 67-Debris-F-WEB.pdf*

[6]*http://www.stapgef.org/stap/wp-content/uploads/2013/05/STAP-CBD-TS 67-Debris-F-WEB.pdf.*

[7]*http://www.unep.org/rio20/.*

[8]*http://rona.unep.org/about_unep_rona/marine_litter/index.html.*

The CMS Marine Debris Assessment (2014) was conducted to review marine debris across three major categories: (1) information gaps in management of marine debris impacts on migratory species; (2) commercial vessel best practices; and (3) effectiveness of public awareness and education campaigns. Outcomes of this three-part report have been used to shape a new resolution on marine debris management which will be considered at COP11 (UNEP/CMS/ScC18/Doc.10.4/Rev.2). Major outcomes and recommendations from the report were shared for IWC consideration.

Major outcomes from Report I included: establish monitoring programmes using standardised methods to assess the prevalence of debris that may have impacts on migratory species; identify sources, pathways and distribution of such debris; assess impacts and population level effects on migratory species; implement cost-effective measures for the prevention of debris; apply targets within national marine debris management strategies with national reporting obligations to COP; encourage prioritisation of research into the effects of microplastics; and explore linkages with other biodiversity-related agreements via multilateral working groups (e.g. IWC Scientific Committee, CBD, IMO, FAO). The report also recommended that CMS establish a marine debris working group.

Priority recommendations from Report II on commercial vessel best practices included: close gaps in international legislation such as MARPOL Annex V concerning fishing vessel exemptions based on vessel size; address the issue of ALDFG building on the Honolulu Strategy and the FAO Code of Conduct for Responsible Fisheries; encourage the use of market based instruments to deter commercial ships from disposing of garbage at sea; encourage the promotion of ship operator awareness measures; invite UNEP to continue its leading role in coordinating stakeholder engagement and implementation of best practices; and encourage the shipping industry to support these measures.

Report III on public awareness campaigns recommended the following actions to CMS: encourage Parties to refer to existing successful campaigns to promote positive responses especially behavioural change; collaborate with other organisations and industry on awareness campaigns; evaluate awareness campaigns to determine success and identify improvements for future campaigns.

Thiele noted that recommendations relevant to the IWC included: promote synergies between international bodies (e.g. CMS, Regional Seas Conventions, CBD, IWC, IMO, FAO, ISO) and more specifically to consider the creation of an inter-convention working group; create innovative partnerships and stakeholder engagement opportunities to address marine debris across key industries; improved research to better understand and prioritise problems and serve as a scientific information platform; and identify upstream preventative measures to keep waste from entering the marine environment.

Thiele also took the opportunity to reference activities of the new CMS-Abu Dhabi office, represented by Ms. Donna Kwan. The Office was set up under the Environment Agency of Abu Dhabi (EAD) which provided funding and technical support to coordinate the MoU on the Conservation and Management of Dugongs and their Habitats throughout their Range; the MoU on the Conservation of African-Eurasian Migratory Birds of Prey and to provide support to conserve other regionally important marine species (e.g. marine turtles, inshore dolphins, sharks, large cetaceans). Marine species entanglement in fishing gear is a well known issue, but not well documented with the exception of dugongs in UAE and sea turtles in Oman. CMS Abu Dhabi welcomes support from the IWC to better understand other types of marine debris impact on species beyond dugongs and sea turtles in that region. Such knowledge would help inform the regional policy and regulatory framework as well as management and decision frameworks in the region.

Meanwhile, UNEP administers the **Convention on the Conservation of Migratory Species of Wild Animal (CMS)**, which has a new Resolution on marine debris currently under review and proposed for adoption at CMS COP11 (Ecuador, 4-9 November 2014). This Resolution builds on the direction of CMS Resolution 10.4 on Marine Debris (adopted at COP10 in 2011), but with more focus on the management aspects, drawing from recommendations presented in a three-part assessment report CMS produced on: (1) Knowledge Gaps in Management of Marine Debris; (2) Commercial Marine Vessel Best Practice; and (3) Recommendations for Public Awareness & Education Campaigns.

In the absence of a CBD representative at this IWC Workshop, Thiele shared some updates from the CBD decision on marine debris. This decision emanated from recommendations in a technical progress report delivered to the Parties (shared at SBSTTA 18 May 2014), which officially noted:

> '*CBD recognizes marine debris is an increasing threat to marine and coastal biodiversity..... Entanglement or ingestion by birds, turtles, fish and marine mammals is well documented and has shown to be fatal to a number of species... Analysis of best practices and experiences in mitigating the impacts of marine debris on biodiversity would help to inform global policy making.*'

Thiele noted that in support of CBD Aichi Biodiversity Targets 8 and 10, a formal decision was made at CBD CoP11/Decision18 that addressed impacts of marine debris on marine and coastal biodiversity. The Decision formally requested the CBD Executive Secretary to collaborate with Parties, other Governments, relevant organisations and indigenous and local communities to: (a) provide information on the impacts of marine debris on marine and coastal biodiversity and habitats; (b) compile and synthesise submissions as input to an expert workshop; and (c) organise an expert workshop to prepare practical guidance on preventing and mitigating the significant adverse impacts of marine debris on marine and coastal biodiversity and habitats that can be applied by Parties and other Governments (December 2014). She suggested the IWC might consider participation at this December workshop to relay the outcomes of the present Workshop to CBD and to help ensure synergies with the IWC.

In discussion it was noted that the activities and recommendations from these UN bodies and reports are largely aimed at a high level, i.e. at governments. One participant inquired about examples of actual implementation on the ground of some the recommendations. While it was acknowledged that these UN recommendations are generally aimed at designing global frameworks for implementation by national governments, convention parties, and on the ground partners (e.g. NGOs, academia, stakeholders), and that implementation can seem like a slow process when dealing with inter-governmental agencies, it was noted that there are some good examples of uptake and implementation on a region to region basis. For example, the Regional Seas Programs have adopted marine debris monitoring and response recommendations with OSPAR having just announced the first new Marine Debris Management framework[9].

[9] *http://www.ospar.org/content/news_detail.asp?menu=00600725000000_000023_000000*

1.8 Conclusions and recommendations

The Workshop welcomed the information on IWC and non-IWC initiatives. It stressed that the global reach of stakeholders focusing on the marine debris issue reinforces the importance of the IWC collaborating with other organisations and initiatives on this issue (see Item 8.1).

2. OVERARCHING ISSUES

2.1 Clarifying marine debris terminology

Wallace briefly outlined the NOAA legal definition of 'marine debris':

> *Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment.*

The Workshop **agreed** to use this as a working definition for the present report. It was noted that UNEP uses the word 'litter' to mean the same thing as 'debris'. For practical purposes, macrodebris can be considered to be anything over 5mm whilst microdebris is anything under 5mm.

It was noted that with respect to fishing gear a number of different terms have been used to distinguish fishing gear that is being used (operationally active) by fishermen and gear that has been abandoned, lost or otherwise discarded. It was agreed that for the present report, the former would be called 'both commercial and other active fishing gears' or COAFG and the latter would be called 'abandoned, lost or discarded fishing gear' or ALDFG. It was noted that use of the term 'active' by itself can be ambiguous since it could be interpreted as mobile fishing gear such as trawls and dredges.

In addition, it was noted that 'wet-stored' gear (gear stored in the water rather than hauled and stored on land during non-fishing seasons) did not fit any of the descriptive gear categories of actively fished, abandoned, lost or discarded gear types. Depending on the regional use of wet storage, the possibility that it should perhaps be considered a separate category was raised although the point was also made that the legal ownership of the gear resides with the holder of the fishing license for such gears and while it might not be operationally active for the target species, it was still operationally active with potential for ghost fishing and entanglements.

In order not to confuse the general concept of bycatch used by FAO (see Item 3.1.1.1), it was **agreed** to use the term 'incidental capture' when referring to cetacean entanglements in fishing gear.

2.2 Improved data collection (including retention/identification of gear from cetaceans)

Saez gave a presentation on gear marking (i.e. labelling gear so that it is identifiable to some degree that may range from individual fisherman to gear type) and experiences from the USA in this regard. As identified in the previous workshop, data collection from entangling gear is an important factor for identifying and understanding the source. If the gear is traceable, it can first be classified as fishing gear or non-fishing gear, and then further studied to understand the factors leading to the entanglement. Traceability allows for more informed management that may reduce the risk of entanglements before they happen. In the case of fishing gear, traceability to the fishermen through gear marking can provide information on where and when the gear was set, if it was COAFG or ALDFG, which fishery (commercial or recreational), and provide insight on the gear configuration. Gear identification creates an opportunity for communication with the fisherman, who can provide useful information for 'real-time' entanglement response as well as long-term solutions. If possible, gear should be collected for further analyses (IWC, 2013).

As an example of the merits of gear marking, Saez noted that the California, Oregon and Washington Dungeness crab trap fisheries, the largest trap fisheries off the US west coast, marks individual traps as part of a trap limit system. Fishermen are allowed to apply for replacement tags for up to 10% of their trap allotment. Through this system, the state fishery management can quantitatively measure the (reported) trap loss. These may not be 'problem' fisheries with the highest gear loss, but marking through a trap limit system provides an example of a way gear loss can be tracked.

Saez also reported on a recent whale entanglement in California that highlights the information that can be gleaned with traceable gear marking. On 30 June 2014, a highly degraded humpback whale fluke was found off San Clemente Island in southern California wrapped in commercial fishing line and five fishing buoys. The buoys were marked with commercial fishing license numbers and also California Dungeness crab buoy tags. The gear markings allowed for contact with the owners of the two sets of gear, through the California Department of Fish and Wildlife. The fishermen stated that they had set their gear off the San Francisco area and had lost their gear at the end of March or April. The fluke was found over two months later and approximately 360 n.miles south of the original gear set location. The buoy tags were industry initiated and implemented in California in 2013 as part of a trap limit system.

She noted that whilst gear marking is used by fishermen to locate their gear, in order for others to be able to identify gear to the fishery, there needs to be some form of standard marking that is searchable. Ideally, there will be a central location where data is held. In terms of development of a lost or found fishing gear reporting system or structure, there are existing models available (e.g. fish tagging studies and reporting of caught tagged fish[10], or pinniped tag databases that allow researchers to look up sizes and colours of tags observed on pinnipeds) that should be investigated before a system is built from the ground up.

The Workshop **welcomed** information of this national initiative. It encouraged similar schemes, especially for fisheries for which it was known or suspected that large whale entanglement is a risk. In discussion, it was **agreed** that there are considerable advantages in gear marking from a cetacean incidental capture perspective. For example it allows important information on incidental capture and factors related to gear including: gear types, loss rates of the various gear types, the persistence of ghost gear by type as a threat in the water column, and the origin of ALDFG. This information is particularly important in assisting in quantifying incidental captures by gear type and in assisting with developing mitigation measures and priorities.

The Workshop noted that the issue of gear marking was one that was being taken up by the fishing sector and fisheries management for their own purposes. The topic has been under consideration by FAOs Committee on Fisheries (COFI) from a fisheries management perspective including deterrence/detection of IUU fishing activity.

It was suggested that that even a 'low-tech' gear marking scheme in combination with examinations of gear removed

[10] *https://www.vasaltwaterjournal.com/report_tagged_fish.php and http://www.fishtag.info/index.htm.*

from whales might be particularly important to resolve three key questions: (1) the region in which gear is set; (2) the fisheries from which the gear came (e.g. traps vs gillnets); and (3) the part of fishing gear from which it came (e.g. buoy lines vs. groundlines between traps). Related issues that could be considered, included placing simple generic marks (e.g. painted or tape bands of specific colours or colour combinations) at strategic points on fishing gear; this is quite different from gear tagging (which includes placing coded information in more sophisticated formats on gear to identify individual fishermen). Consideration should also be given to appropriate intervals for marks to be placed. For example, typical lengths of line found on and removed from entangled whales would suggest intervals of every 30 to 40m. Marks would need to be broad enough (e.g. 30cm or 1ft long) to be visible from boats 100m or more away or from aerial photographs of entangled whales. Such a system is currently being developed by the National Marine Fisheries Service for trap and gillnet fisheries along the US east coast to improve information on the sources of lines removed from North Atlantic right whales and humpback whales.

Rather than trying to make any specific recommendations here, however, it was **agreed** that probably the most productive approach was for the IWC to participate in relevant IGO fisheries discussions to raise awareness on the merit of gear marking to reduce the incidental capture of cetaceans (see the recommendation under Item 8.2.1). Technical details on implementation of a gear marking scheme are beyond the scope of the present workshop. The Workshop **proposed** that appropriate IWC experts participate in any future IGO workshops on gear marking to ensure that issues surrounding cetacean entanglement are adequately addressed. The Workshop also **agreed** that the matters of compliance and reporting are extremely important, either separately or as part of discussions surrounding any future scheme or schemes.

The Workshop **agreed** that although there is clear value in a standardised global marking system, it was important to recognise that approaches that may be appropriate in developed large scale fisheries may be impractical or economically infeasible in artisanal fisheries or fisheries in the developing world. Similarly, the value of a centralised global database (or perhaps regional databases) for gear and the reporting of lost gear was recognised. However, it was again **agreed** that this was beyond the scope of the IWC.

A recommendation on gear marking can be found under Item 8.2.1, whilst the reporting of ALDFG is considered under Item 3.1.1.3.

On the more generic issue of determining the origin of floating or drifting ALDFG, the Workshop noted that studies of prevailing oceanographic conditions can be valuable as shown in the studies by Hardesty and Wilcox (2011) and Wilcox *et al.* (2013) off northern Australia.

2.3 Identifying hotspots of debris (geographically, temporally and within the water column)

2.3.1 Technological data collection e.g. use of Synthetic Aperture Radar, deep sea surveys

The Workshop briefly considered the use of technology to detect ALDFG and other large marine debris. This could be useful, for example in detecting areas where gear and other debris might collect in order to focus clean-up work[11].

[11]A special issue of *Marine Pollution Bulletin* (Vol.65, Issues 1-3, 2012) edited by K. McElwee, C. Morishige and M. Donohue was dedicated to 'At-sea Detection of Derelict Fishing Gear'.

The Workshop noted that the logistical difficulty (in terms of cost and asset access) of accessing open ocean areas with aerial or vessel surveys, have meant that use of satellite sensors provides a valuable potential opportunity for targeted detection attempts in remote areas. Satellite sensors can offer both broad coverage and increasingly fine resolution; commercially available high-resolution visual and multispectral data can be in the 0.5-5m range. However, satellite detection and identification of debris type has proved to be difficult given the diversity of debris objects in size, shape and colour, as well as limitations of snapshot satellite data in reliably differentiating debris from active vessels, sea-state features, or floating aquatic vegetation.

ALDFG nets provide additional challenges in detection. A primary difference between detecting nets and other debris is that nets present a very dynamic and generally small target at the surface with the majority of the net underwater. The portion of the net that is at the surface is typically awash, and non-contiguous (with water showing through the holes in the mesh). With the highest resolution commercially-available satellite data being 0.5-5m per pixel, identifying individual solid objects from a few pixels is challenging. Taking into account that nets do not reliably present a solid, contiguous target at the surface, reliable detection and identification of nets is a further challenge. There have been two *in situ* detection tests to evaluate the capability of multiple satellite sensors (SAR, multi-spectral and panchromatic visual) to detect nets deployed from vessels off Hawaii, first in 2006 and again in 2012 but neither was successful in identifying nets in satellite collected data thus far. In the Ghostnet Project, satellite data was used to detect oceanographic features (e.g. ocean current convergence zones or straits) that had the potential to aggregate debris, such as nets, which were later overflown as part of an aerial survey collecting visual/photographic data.

NOAA and other groups are continuing to evaluate and pursue methods to expand and improve both detection of debris and modelling of likely debris accumulation areas on shore and in the open ocean. Improvements in these capabilities can help build our understanding of ALDFG gear behaviour and inform prioritisation of efforts to address its impacts.

The Synthetic Aperture Radar (SAR) system is an airborne system that can be used to produce images at sufficient resolution to identify large debris. However it is an expensive process and experimental use by NOAA found that it was most useful if other means were used to narrow down the area to search. Other potential technologies referred to included use of reflectance micro-Fourier-transform infrared spectroscopy to detect microplastic concentrations and a new type of passive sonar (Subsea Asset Location Technologies or SALT) originally developed for military use. It was also noted that side-scan sonar can detect ALDFG under the proper environmental conditions (e.g. flat bottom with low natural variability).

2.3.3 Modelling approaches (e.g. cetacean and debris (lost gear/other debris) co-occurrence; fishing effort modelling)

One of the important areas of expertise of the IWC Scientific Committee is the use of modelling in a management context that takes inevitable scientific uncertainty explicitly into account. Donovan briefly introduced the work of the Committee in this regard, noting that there are the following major broad uses in a management context: (1) population modelling used to examine the status of whale populations and predicting future trajectories in the light of known and projected human activities and taking uncertainty explicitly

into account (in effect these can also be considered risk analyses); (2) habitat and spatial modelling to examine geographical and temporal density distributions of populations for comparison with similar models of actual and potential threats to determine high risk areas ('hot spots'); and (3) a combination of modelling approaches to evaluate the effectiveness of actual and potential mitigation measures. In all cases, modelling approaches can be valuable in highlighting priorities for future data collection.

Models are a valuable tool to: (1) assess status as a means of determining population level priorities; (2) examine uncertainty by considering plausible scenarios consistent with available data; (3) identify which data gaps are most important in a management context; and (4) develop hypotheses and predictions arising out of those that can be tested by the collection of targeted data. Experience has shown that the relationship between models and data is an iterative process – initial models may be based on relatively few data and highlight which data gaps are important in a management context. It is important to note that these initial modelling efforts with poor data are rarely suitable as the basis for management. However, they have great value in allowing focussed data collection such that more refined models can be developed and the range of management implications narrowed to allow more targeted management actions with a sound scientific basis.

In terms of data requirements, the types of information required for human activities and cetaceans are broadly similar, e.g. overall abundance and trends, density and abundance at appropriate geographical and temporal scales, movements and behaviour, etc.

With respect to the determination of higher risk areas or 'hot spots', it is important to recognise that the mobility of cetaceans (and their prey) means that it is rarely if ever sufficient to base relative density maps on one or two years' data given natural variation. Spatial and habitat modelling is a valuable tool but requires good data sets including information on potential explanatory variables if it is to be used in a predictive manner. Donovan noted that this matter was discussed thoroughly at the recent IWC workshop on ship strikes, and the present Workshop noted the general conclusions and recommendations made there with respect to the strengths and weaknesses of modelling high risk areas (IWC/65/CCRep01, item 5.1.1.3) for human induced stressors and cetaceans; caution was urged over using simple range maps for cetaceans (and human activities) when identifying high risk areas as these can be highly misleading if the data limitations are not carefully considered and explained.

An important modelling area that requires further development relates to the question of synergistic and cumulative effects of stressors. Donovan noted that the recent IWC Arctic Workshop discussed this in more detail (IWC/65/Rep07[12]) and has made a recommendation that the Scientific Committee consider holding a co-hosted workshop or workshops with appropriate stakeholder participation on identifying and evaluating threats to cetaceans from human activities including: (a) data and analytical requirements (both for cetacean and human activities) for identifying high risk areas to cetaceans at the correct geographical and temporal scales; (b) evaluation of non-direct threats to cetaceans at the population level including chemical pollution, noise, climate change etc.; and (c) methods to examine synergistic and cumulative effects of a range of actual and potential threats at the population level. He noted that this work would be extremely important in the context of assessing high-risk areas and priorities with respect to marine debris.

[12] *http://iwc.int/iwc65docs*.

2.4 What can be learnt from other species (e.g. risk analyses for seabirds and turtles by CSIRO)

Wilcox introduced the work of CSIRO on risk analysis for ALDFG entanglement impacts on turtles, ingestion of debris by turtles and ingestion of debris by seabirds. He presented a range of approaches that can be applied in contexts from well-known data-rich systems to systems where there is little or no existing data. The research is motivated by existing Australian national policy on the threat posed to wildlife by debris, and the need to assess the magnitude of the threat.

One of the primary approaches used is to model the overlap between species range and purported threats (i.e. ALDFG or debris) and to use this overlap to estimate the exposure of species to these threats. The exposure estimates were then included in a statistical model that related records of entanglement or ingestion to exposure, along with other important factors such as foraging strategy, species, or other factors. Using this validated model, expected ingestion or entanglements could then be predicted at a range of scales from single taxa within a regional sea to globally across 188 seabird species.

Wilcox then summarised research which is underway which could be used to infer impacts at the population or higher level of organisation, such as the number of individuals killed, from the preliminary models of risk. He presented two approaches. The first approach used observed catches of marine turtles in ALDFG to estimate the catch rates of the gear. Using experimental results on the length of time dead turtles remained in nets and a regional oceanographic model to estimate the paths of ALDFG, the number of turtles killed was estimated from the catch rates. The second approach used 'expert elicitation' to assess the expected population impact (fraction of animals affected multiplied by chance of lethal, non-lethal effects). In this analysis, a statistical model was used to control for bias introduced by individual respondents. The semi-quantitative questionnaire covered seabirds, turtles, and marine mammals. When finalised, the analysis will provide estimates of population scale impact from the 20 most common marine debris items found in coastal clean-ups.

Wilcox suggested that these approaches could be applied to cetaceans. An important consideration is to provide advice to policy makers in the short term, recognising the inherent uncertainties, while pursuing more in-depth analysis in the fullness of time.

2.5 Future work on high risk areas and populations

A number of methods for ecological risk assessment (ERA) of entanglement, injury and mortality of cetaceans in marine debris are available for the continuum of data-deficient to data-rich regions and species. Risk assessment can move from qualitative to more quantitative methods progressively, with subsequent levels focusing on species or regions, identified from preliminary screening, as being of high risk. In this way, the less rigorous risk assessments, which have a relatively high degree of uncertainty, may provide a useful tool to consider large numbers of populations or sites, and then prioritise those populations or sites deemed to be relatively vulnerable for more in-depth data collection and/or analysis.

Relatively high-quality surveys of debris densities in the Western Atlantic and Eastern Pacific are available currently with more sparse data from all ocean basins and from each of the major oceanic gyres. Some participants stated that modelling efforts have expanded these limited data to provide more reliable estimates of relative debris densities globally and less reliable absolute densities. They also believed that similarly, for fisheries and other sources of specific types of debris, there are either global-scale data on distribution and density, or reasonable proxies that can be used to describe the pressure.

The Workshop **requests** that the IWC Scientific Committee considers ways of combining estimates of oceanic debris and information on cetaceans to identify priorities for mitigating and managing the impacts of marine debris on cetaceans. One approach to consider would be using a semi-quantitative ERA method with the available data on fisheries, cetaceans and cetacean-marine debris interactions to provide preliminary estimates of high-risk locations or species, and to identify situations and/or populations that should be high priorities for additional data collection, more detailed analysis and/or immediate mitigation and management. The results from any analyses should explicitly account for uncertainty in the underlying data, such that fisheries, NGOs and IGOs understand the scientific basis for any recommendations that may be made and the need for adaptively managing as new data become available.

3. DEVELOPING MITIGATION APPROACHES

Discussions under this section were chaired by Chopin and Bass.

3.1 Abandoned, lost and discarded fishing gear (ALDFG)

3.1.1 Overview of existing legislation, agreements and strategies to tackle ALDFG by UN agencies

3.1.1.1 MINIMISING THE INCIDENTAL CAPTURE OF WHALES IN COMMERCIAL FISHERIES – AN FAO PERSPECTIVE

Chopin provided an overview of FAO's work relevant to the issue of marine debris and cetaceans. He noted that the term 'bycatch' includes the incidental catch of whales, seabirds, turtles and other non-target species by fishing gears and has been addressed in FAO's Code of Conduct for Responsible Fisheries[13] and more recently in FAO's International Guidelines for bycatch management and reduction of discards[14] which were endorsed by the Committee on Fisheries in 2011. The term 'incidental catch' as used by FAO in fisheries refers to that part of the catch which was not originally targeted, but was caught anyway. An example of the use of terminology can be found in FAOs International Plan of Action for reducing incidental catch of seabirds in longline fisheries[15].

Chopin informed participants that calls for action to reduce the incidental capture of whales in fishing gear has occurred at the global level in the UN General Assembly (UNGA) and in the Committee on Fisheries (COFI), most recently at its 31st session in Rome 2013. Calls have also been made by Governments and NGOs for measures to reduce the incidental capture of whales in fishing gear. The incidental capture of whales in commercial fisheries may adversely affect the profitability of fishing operations as a result of gear damage and loss of fish catch. The entanglement of some whale species in ALDFG through a process known as 'ghost fishing' may contribute to a significant loss of biodiversity.

Chopin proposed that if the IWC wishes to minimise the incidental capture of whales in commercial fisheries, it may consider:

(a) promoting and raising awareness on incidental capture of whales in global and regional fora addressing fisheries management, policy and biodiversity conservation;
(b) broader use of reliable and cost-effective bycatch mitigation technologies;
(c) harmonised and improved bycatch data collection protocols (including logbook data reporting) to identify spatial and temporal entrapment hotspots;
(d) the use of effective gear marking to identify ownership and to increase gear visibility;
(e) encouraging the reporting of lost fishing gear and locations of whale entrapments;
(f) development of best practices to minimise incidental capture and safe release of whales from fishing gear;
(g) capacity-building within fishing communities to facilitate safe release of whales caught incidentally in fishing gear;
(h) ALDFG removal from the aquatic environment and safe disposal; and
(i) involving experienced fishing masters and crews in bycatch mitigation experiments.

Chopin stressed that FAO was not advocating any particular option. He emphasised that solutions need to be tailored to specific problem fisheries and take into account practicality, safety, cost effectiveness, and would work best when the fisheries sector is fully engaged. The Workshop **welcomed** the technical guidance from FAO at the meeting.

It **agreed** that the most effective approach to reducing the incidental capture of cetaceans in all fishing gear would be through co-operation with FAO, RFMOs and the fishing sector. Recommendations relevant to this appear under Items 8.1 and 8.6.

The Workshop **suggested** that the IWC Secretariat, in cooperation with others such as UNEP, CMS and CBD, bring the issue of incidental capture of marine mammals to the attention of the UNGA and/or COFI. Consideration should also be given to multi-agency funding proposals to support mitigation actions. Other suggested areas that might be appropriate for future co-operation included relevant aspects of gear-marking, removal of ALDFG, development of guideline documents, holding of joint expert workshops, databases of lost gear, sharing of fishing effort data, links between biodiversity and livelihood, mitigation measures and the harmonising of data recording.

3.1.1.2 MONITORING AND MANAGEMENT OF ALDFG WITHIN REGIONAL FISHERIES MANAGEMENT ORGANISATIONS AND OTHER INTERGOVERNMENTAL ORGANISATIONS

Gilman presented an overview of draft findings from a study on the topic intergovernmental governance of ALDFG (Gilman *et al.*, In press). He noted that ALDFG can cause substantial ecological and socioeconomic problems. Over the past decade there has been increasing international recognition of the need for multilateral efforts to effectively address the transboundary problems resulting from ALDFG including ghost fishing. Ghost fishing by ALDFG removes both target and non-target species of fish and shellfish, as well

[13] *http://www.fao.org/docrep/005/v9878e/v9878e00.htm.*
[14] *http://www.fao.org/fishery/nems/40157/en.*
[15] *http://www.fao.org/fishery/ipoa-seabirds/en*.

as species with relatively low fecundity such as seabirds, sea turtles, marine mammals and elasmobranchs, some of which are endangered, threatened or protected. Ghost fishing is most problematic in passive fishing gear such as gillnets and pots. Used worldwide primarily by coastal, artisanal, small-scale fisheries, about a fifth of global marine fisheries landings comes from gillnet fisheries.

To benchmark regional measures for monitoring and mitigating ALDFG and ghost fishing from marine capture fisheries, an assessment was made of ALDFG-related data collection protocols and conservation and management measures (CMMs) of regional fisheries management organisations and intergovernmental organisations (IGOs) that can adopt fisheries conservation and management measures that are binding on their members. Ten of the 19 assessed IGOs manage fishery resources captured in an active gillnet or trammel net fishery.

Study findings highlight opportunities for improved regional monitoring of ALDFG. Approximately half of the IGOs have logbook or observer data collection protocols for information on ALDFG with large variability in the information collected by each IGO. Harmonising ALDFG data collection protocols where they are in place, and filling gaps for those IGOs lacking procedures to collect this information, would contribute to improved monitoring of ALDFG in regional marine capture fisheries.

Findings identify opportunities to improve regional management of ALDFG and ghost fishing. For example, seven of the 19 IGOs lack binding measures to prevent and remediate ALDFG and associated ghost fishing. IGOs with measures in place are making use of a small subset of available tools. Of 18 categories of measures to prevent and remediate ALDFG and manage ghost fishing, only half are used by the 19 IGOs. Measures prohibiting the use of gillnet and trammel net gear in part or all of the IGO's area of competence, in part, to reduce ghost fishing, was the most commonly employed measure. Gear marking to identify ownership and to increase passive surface gear visibility was the second most commonly used measure. Both forms of gear marking contribute to reducing ALDFG. Measures requiring the possession onboard of equipment to retrieve ALDFG, and to report lost gear that they could not retrieve, which contribute to remediating ALDFG, was the third most commonly used measure to manage ALDFG.

RFMO/As could tap a broader suite of complimentary methods to prevent and remediate ALDFG and associated ghost fishing. In particular, spatial planning measures designed to separate passive and mobile gear sectors to avoid gear conflicts and concomitant gear loss, a leading cause of ALDFG in some areas, could be beneficial in mitigating ALDFG in some fisheries.

In discussion it was noted that the different international bodies and organisations assign different levels of priorities to this issue; recommendations from the IWC and others may assist in increasing attention and thus priorities. This should form part of the work envisioned under Item 8.1. This could include the provision of data on ALDFG by associated whale research platforms (e.g. the IWC POWER cruise already collects data on marine debris and other cetacean cruises and platforms of opportunity such as whale watching vessels could also be encouraged to do so). It was noted that an important method to raise issues within RMFOs was to submit documents to their scientific bodies.

3.1.1.3 IMO - MARPOL ANNEX V

In light of a representative from the IMO being unable to attend the Workshop (in consultation with IMO) Bass provided the Workshop with a review of the role and responsibilities of the IMO with respect to ALDFG. The summary noted that MARPOL Annex V requires signatory nations to provide adequate port reception facilities for accepting garbage (including ALDFG) generated by ships. It was noted that the Global Integrated Shipping Information System (GISIS) website[16] provided and managed by the IMO provides a database of garbage management facilities searchable by port and waste type, it did not appear to allow specific identification of those ports and waste management providers that accept (and/or recycle) end-of-life fishing gear.

The Workshop noted that many port reception facilities did not accept fishing gear and that this was a problem, but also heard several presentations referring to increasing efforts to equip ports with dedicated fishing gear disposal provisions (e.g. Nofir and the Healthy Seas Initiative). The Workshop considered that knowledge of where end-of-life fishing gear could be responsibly disposed of (ideally free of charge) could (if combined with education outreach) reduce incidence of gear discards.

In discussion, it was noted that loss of fishing gear which poses a 'significant threat to the marine environment and navigation' is supposed to be reported to the IMO under MARPOL V, although there is no definition of 'significant'; without this or some accepted guidance on what comprises a 'significant threat', reporting is low. It was also noted that the Australian Maritime Safety Authority (AMSA) tracks large floating debris that may be a hazard to navigation. In general, the Workshop **agreed** that many local, regional or national voluntary reporting schemes have not been successful, and that even 'mandatory' reporting such as that under MARPOL appears to be poor.

A recommendation relevant to IMO and MARPOL is given under Item 8.1.1.

3.1.1.4 UNEP (HONOLULU STRATEGY AND GPML)

See Item 3.2.1.2.

3.1.2 National and regional plans for prevention and recovery of ALDFG

3.1.2.1 NORWAY

Ruud gave a presentation on the Nofir[17] project for recycling fishing gear in Norway. This project has successfully created a profitable national system for collecting and recycling discarded fishing equipment and this is now being extended across other European countries (thus far Iceland, Denmark and parts of the UK). In part this has been possible because of the large size and number of nets. Nofir is also trying to expand into southern Europe and Turkey.

Norway has a very long coastline and an important fishing sector. Large-scale fisheries include trawl nets, gillnets and aquaculture. The latter is expanding rapidly using much bigger cages which present a large disposal problem when they require replacing and are predominantly comprised of plastics. Fisheries waste, particularly old nets, is not welcome at waste facilities as it entangles the machinery, such that old gear either went to landfill, was dumped at sea or was burnt. There is a particular problem in Norway with steel wires on the sea bed which can snag gillnets, etc.

An important component of the Nofir project is that it collects discarded gear for free; selling the valuable plastic contents of the gear pays for the disposal of net components

[16] *http://gisis.imo.org*.
[17] *http://www.nofir.no/*

(including other types of plastics) that cannot be recycled or are less valuable as well as collection of the more remote debris. Net dismantling and processing is carried out in a plant in Lithuania. The Norwegian Directorate of Fisheries collects and recycles discarded gear, including in remote places such as Svalbard.

Some of the challenges of the project include transport, laws and regulations regarding hazardous waste since copper is used on the nets as an antifouling agent and the general difficulties in dismantling and recycling (plastics recycling is complex). In addition effort is needed to increase awareness of the problem for the fishing sector as well as to improve the ability to make a profit from the enterprise.

The Workshop **welcomed** the news of this successful project although it was noted that in some countries (e.g. South Africa), present laws state that all fisheries waste must go to landfill.

3.1.2.2 USA

Wallace summarised the various examples of marine debris mitigation covered by the NOAA Marine Debris Program[18] for ALDFG, the mission of which is to identify and solve the problems of marine debris through research, prevention and reduction.

She presented examples of work done by the NOAA Marine Debris Program in Alaska, the West Coast, Great Lakes and Southeast regions of the United States. In Alaska, debris is removed from very remote areas with very small populations and presents many challenges related to removal and disposal. More than 50% of debris is fishing related and most of that gear is not local.

The West Coast Governors' Alliance has identified marine debris as a priority issue. One of the goals of the marine debris strategy is to reduce the amounts and impacts of ALDFG through loss prevention, gear modification to prevent impacts if fishing gear is lost and surveys for its removal. Two specific examples of projects are the Northwest Straits Foundation removal of ALDFG nets in Puget Sound and the Sea Doc Society's California Lost Fishing Gear Recovery Project in California where fishermen remove lost gear through a buy-back programme.

NOAA will be funding a new prevention effort in the Great Lakes. In Wisconsin, partners will be interacting with 100 anglers at sport shows on net safety, developing videos, a website and will be working with fishermen in workshops to reduce the amount of gear lost.

The Florida Marine Debris Action Plan is in the planning and development phase. Initial ideas to minimise impacts from ALDFG are to decrease the cost for fishing licenses for people who complete training, establish a fund for emergency response to remove and dispose of ALDFG and limit the amount of effort so that less traps are deployed every year.

NOAA also supports the Fishing for Energy project around the United States. Fishermen can dispose of gear free of cost and it is transported to waste-to-energy facilities and converted to energy. To date 2.5 million pounds of ALDFG have been converted to electricity through this project. NOAA is also funding projects related to gear modifications to lessen the impacts of ALDFG.

In summary, Wallace stressed that not all debris is local and that prevention is better than removal. However, solutions should be local and organisations should work with local partners using local expertise.

3.1.2.3 HAWAII MARINE DEBRIS ACTION PLAN

Koyanagi and Godenzi presented the Hawaii Marine Debris Action Plan. This project is a community-led cooperative effort with Schnitzer Steel and Covanta Energy. The debris is incinerated to generate electricity with incineration, producing 8-10% of Oahu's power needs, although marine debris comprises a relatively small component of the incinerated waste[19].

The first goal of the Plan is to reduce the backlog of marine debris. More than 700 tonnes of debris have already been removed from the northwestern Hawaiian Islands but it is an ongoing problem (50 metric tonnes 'reappeared' in 2012-13). Challenges from this area are the distances between islands and atolls, physical characteristics of atolls making it impossible to use large ships. Surveys are conducted by pairs of free-divers and tow-boarders, and they also carry out the removal of found fishing gear in the coral. Free-diving is a good way to do this as there is good visibility and shallow water. Scuba is used occasionally for debris that is too deep or large. Shoreline removal operations are also carried out. This is to prevent shore-based animals like monk seals and nesting turtles from becoming entangled. Almost all of the gear is from non-Hawaiian fisheries. Collection is expensive and at present NOAA is paying for the removals from reefs but there is pressure on this funding after next year.

The collected waste is sent to be incinerated at Waste-to-Energy H-POWER: Honolulu Project of Waste and Energy Recovery. Ninety percent of the rubbish generated on Oahu is burned and steam-turbines generate 8-10% of Oahu's power needs. Their new Mass Burn Technology boiler can accept larger pieces of marine debris. The older boilers required material to be cut into pieces. A workshop will be held next week with Covanta Energy, NOAA, and Schnitzer Steel to revise the guidelines for Acceptable Waste to allow for more types of marine debris and larger sizes. Emissions from the plant are very tightly controlled.

The background to the Nets to Energy Program was the Clean Oceans Initiative started in 1999 in Hawaii with partners Covanta Energy, NOAA and Schnitzer Steel. It has now been renamed Nets to Energy and can be found across the USA. Old gear can be deposited in free-to-use bins and is then incinerated. This project is not quite cost-neutral, but provides a valuable community service. There is considerable community goodwill with private companies involved with bin collection, transport, processing, and finally incineration for energy.

The second goal of the Plan is prevention and a workshop was held in 2014 to develop a two-year action plan, share experiences and discuss gaps in knowledge.

In discussion, it was noted that there are a number of valuable features of this community driven programme that might be applicable elsewhere including in developing countries, and indeed some companies are looking into this. Factors that need to be taken into account include cost-benefit analyses (e.g. small populations may not generate enough waste to burn or to justify the cost of a plant, even with outside ALDFG; availability of landfill sites may also affect decisions; recycling and reduced use of plastic goods is preferable) and local legal frameworks.

3.1.2.4 SOUTH KOREA

Hogan summarised information on the Gear Buyback Program which was initiated in 2003 by the federal Ministry

[18] *http://marinedebris.noaa.gov/*

[19] *http://www.covanta.com/facilities/facility-by-location/honolulu.aspx.*

of Maritime Affairs and Fisheries and implemented in 51 locations throughout South Korea. The premise was that the government would 'buy' any ALDFG fishing line, rope, or net that the fishing fleet located and brought back to port in the course of their standard fishing operations, at the cost of approximately US$10 per 100 litre bag. The collected gear was then taken to energy plants for incineration and the programme costs were shared between local and the central government. Between 2007 and 2011, almost 200 fishing vessels, representing 1,814 participating fishermen participated in the programme, yielding 700 tons of ALDFG. Unfortunately the program was discontinued in 2013 for two primary reasons:

(1) some of the fishermen were stuffing their household trash into the bags, for the payments; and
(2) some fishermen lost interest in the programme when sorting the items became too tedious and the payment was no longer sufficient to retain their interest.

3.1.2.5 WESTERN EUROPE (HEALTHY SEAS)

Hogan reported that the Healthy Seas initiative is a consortium of the following European companies and NGOs that collect debris from the North, Adriatic, and Mediterranean Seas, and convert it into consumer products:

(a) European Centre for Nature Conservation (ECNC);
(b) Aquafil (manufacturer of nylon netting);
(c) Star Sock (sock company and licensee); and
(d) Nofir (collects discarded fishing gear across Europe – see Item 3.1.2.1).

Healthy Seas recovers fishing nets and regenerates them into ECONYL ® yarn, which is then turned into new products including socks, carpets and swimwear. Since 2011, they have collected 16,000 tonnes and converted it into new polymers and yarn. Each month, the Aquafil plant in Slovenia processes 400-500 tonnes of fishing nets; 40% of total volume of input into the factory. Currently the majority (80%) of their input nets are from aquaculture rather than ocean fisheries, although this is changing. In 2013 alone, a total of 14 diving trips courtesy of a network of 60 volunteer divers yielded 20 tonnes of nets recovered. At the beginning of August 2014, a new pilot project began in Ancona (Italy) where more than 250 fishing boats began to collect ALDFG nets, and to take divers out for collection at the sites of shipwrecks and reefs. A similar pilot is now being scouted in Catalonia, Spain.

3.1.2.6 PHILIPPINES (NET-WORKS)

Net-Works is a partnership initiative between the Zoological Society of London (ZSL, a conservation NGO), Aquafil (nylon net recyclers), and Interface (carpet company). The premise is for the communities living in the Danajon Bank of the Philippines to collect and sort nets, which are a major entanglement hazard and threat to the reef and its ecosystem. ZSL coordinates the collection efforts and payment structure through the creation of community banks, Aquafil then processes the netting into yarn, and Interface buys the yarn to make carpet tiles, fulfilling their company mission of a closed-loop supply chain. Since June 2012, 9,000 kilos of discarded fishing nets have been converted to carpet tiles; 892 local fishers and their families collect fishing nets in exchange for payment; for every 2.5 kilos of nets collected, villagers receive enough money to buy 1 kilo of rice.

This project, which actively pursues a role for the private sector, continues to succeed by assigning a commercial value and price point to the 'product' of marine debris.

3.1.2.7 AUSTRALIA

Gunn presented Ghost Nets Australia (GNA). Originally, this programme focused on social reform through managing an environmental issue. This was achieved by building alternate livelihoods for 32 local indigenous communities across northern Australia enabling the removal of ghost nets (>90% of the marine debris) from over 3,000km of coastline, raising awareness internationally and providing ongoing maintenance of the issue.

The data the rangers were trained to collect covered the magnitude of the problem and the difficulties in being able to prevent it, with less than 9% of the gear being of Australian origin. As this lead to many unanswered questions, in 2009 the programme joined with CSIRO to help research the source and impacts of the nets further.

Once the geographical source of the nets was identified as being the Arafura Sea, both GNA and CSIRO partnered with the Arafura Timor Seas Ecosystem Action (ATSEA) programme in Indonesia to explore the causes, drivers and possible solutions for ALDFG in the region through workshops with local fisheries. The initial reaction was a denial that the problem originated in their fisheries. However, once an open dialogue was created it was found that most of the gear was abandoned due to interaction with the sea floor and gear conflict. The main drivers for this are over-capacity; there are too many boats especially from IUU fishing which is three times greater than legal fishing. The more vessels there are the more ALDFG in an area.

Solutions developed in the workshops fell into three major categories: education; technical (boat-based); and regulation. Boat-based technical solutions were prioritised. In 2014, many of the regulatory prevention strategies that resulted from the workshops with the Arafura fishing industry were adopted by the Ministry of Marine Affairs and Fisheries, Indonesia in their first regional fisheries management plan (FMP 719).

Currently, GNA is working on an improved net identification system that focuses on identifying the use of the net rather than where it was manufactured, or flag of the vessel, as this should provide the information needed to locate specific fishing industries with which to work directly on further prevention measures.

3.1.2.8 WAP SEA CHANGE

Bass provided an overview of WAP's Sea Change campaign, and the development of the Global Ghost Gear Initiative to tackle ALDFG. The campaign's core aim is to catalyse replication and expansion of effective solutions in order to create a global, measurable decrease in the volume of fishing gear being abandoned or lost in the oceans, and in order to create a measurable increase in the volume of ALDFG removed from the marine environment. A primary stakeholder group for the campaign is the seafood retail industry, with a goal of working with retailers to encourage and enable them to help promote and support ghost-gear mitigation policies and practices within their fishery supply chains. A key tool to facilitate the better sharing of essential information and data on the issue is the development of the Global Ghost Gear Initiative (GGGI), an alliance of governments, industry, intergovernmental and non-governmental organisations, with a shared commitment to both better understand and tackle the problem of ghost fishing gear. More information about the Initiative, including the process to register interest, and attend the GGGI's first round table meeting in November 2014, can be found on the WAP website[20].

[20] *http://www.worldanimalprotection.org/sea-change*.

3.1.3 Facilitated panel discussion – strengths, weaknesses, opportunities and threats

The Workshop thanked all presenters and **commended** the ALDFG reduction and removal initiatives underway. It **encouraged** continuation, replication and expansion of such effective initiatives. It welcomed the development of cross-sectoral partnerships to address ALDFG, including the Global Partnership on Marine Litter and the Global Ghost Gear Initiative. The Workshop also **emphasised** the importance of focusing on reduction and prevention efforts as the most sustainable, long-term solution to the problem of ALDFG. In developing such initiatives it emphasised the importance of examining why some projects fail as well as why others succeed. Key factors include cost-effectiveness (including determining 'true' costs), social awareness and the importance of community and local involvement along with industry.

3.1.4 Data needs and recommended research actions to inform longer term management strategies for impacts of ALDFG on cetaceans

3.1.4.1 DIAGNOSING ACTIVE VERSUS ABANDONED, LOST OR DISCARDED (ALDFG) FISHING GEAR ENTANGLEMENT

Lyman and Smith introduced this topic. Currently, even in regions with disentanglement networks and specialists who can identify gear removed from whales, less than 50% of the materials can be identified to a particular fishery. It is even more difficult to determine if the rope and net removed from whales was Commercial and Other Active Fishing Gears (COAFG) or ALDFG when the whale encountered it. However, while the impacts to the whales may be the same, many of the management/mitigation strategies may differ depending on whether the gear was encountered as ALDFG or COAFG.

In many regions, COAFG rather than ALDFG is perceived as the primary threat to large whales. For example, ALDFG was strongly indicated in only 4.2% (n=237) of total large whale entanglement cases reported in Alaska and Hawaii since 1999, however the value for Hawaii alone was higher at 9%.

Whilst marine debris, by its very nature (e.g. fragmented or degraded), is more difficult to positively identify, the Workshop **agreed** that more effort should be put toward not only identifying gear as ALDFG vs COAFG, but also whether it was abandoned, lost, discarded or wet-stored. Ultimately, the different gear types may pose similar threats, but the source of that threat is still necessary for effective management and prevention. Use of a suite of data indicators will be required including: amount/degree and type of fouling; degradation/age (e.g. UV damage determined visually and through breaking strength); multiple gear types entangled together; gear markings that provide additional temporal/spatial information; the health of the animal or other impacts of the gear.

Since large whales may carry the gear for long periods of time and over large distances, there are challenges in interpreting these indicators. For instance, gear found with heavy fouling on a large whale, may have been encountered as ALDFG already fouled, or could have been COAFG that became fouled while it was on the animal over a long period of time. However, looking at the totality of the indicators, and with a greater sample size over time, a probability matrix may eventually be developed much like has been done recently in arriving at serious injury determinations in the USA for large whales impacted from ship strikes and entanglement. It was **agreed** that this issue should also be considered by the IWC entanglement expert group at its next meeting, and at the forthcoming IWC Workshop on prevention of entanglement to be held in March-April 2016.

A recommendation relevant to this issue is given under Item 8.2.1.

3.1.4.2 IDENTIFYING 'PROBLEM' FISHERIES WITH HIGH RATES OF GEAR LOSS

The Workshop noted that wherever gear (especially passive or static gear) and large whales are found together, entanglements are likely. It noted that the 2010 IWC Workshop on entanglement had summarised the available information from IWC national progress reports from 17 countries between 2003 and 2008 (IWC, 2012).

Entanglements were reported for 15 gear types (using ISSCFG categories[21]) including seines, trawls, gillnets and entangling gear, traps, hooks and lines, aquaculture and shark control gear; eleven species of large whales were involved.

Participants at the Workshop provided some additional information:

(a) the US Atlantic coast take reduction schemes (right, fin, humpbacks) have focussed on pot and gillnet fisheries;
(b) in South Africa, static fishing gear is the major cause of large whale entanglement (Meyer *et al.*, 2011), especially the types associated with the West Coast rock lobster industry and the large-mesh gillnets that are set off the coast of KwaZulu-Natal to reduce shark attacks; and
(c) in South Korea, analyses of entanglements found that common minke whales were primarily entangled in three types of gear: set nets, pots and gillnets (Song *et al.*, 2010).

In the USA, right, fin, sei, and humpback whales are protected through legislation requiring fisheries with known interactions to be identified and managed in order to minimise the seriousness and lethality of the fishing gear interactions with these endangered and threatened large whales. These fisheries are identified from efforts including: fisheries observers on fishing vessels; gear investigations of gear removed from entangled whales through disentanglement efforts; entangling gear removed from beached whales; and mandatory reporting of marine mammal and fishing gear interactions, as well as lost fishing gear. Fisheries identified as those that have had high occurrences of previous interactions with endangered and threatened large whales are included in discussions with government fishery managers on the state and federal level, researchers, and whale biologists in order to develop fishing gear and practice modifications to minimise the seriousness and lethality of those interactions. As part of these collaborations, the Atlantic Large Whale Take Reduction Plan (ALWTRP) has been developed and has come to require specific gear markings to ensure that fisheries with high levels of interactions are identified and managed appropriately. Effective marking of fishing gear is thought to inform fishery managers as to the fisheries origin of the gear found and removed from entangled marine mammals. Both trap/pot gear and gillnet gear is required to be appropriately marked along the US Atlantic coast. An excerpt from a quick reference guide for the Northeast US Trap/Pot Gear Guide is shown in Fig. 1[22].

[21]And see *http://www.fao.org/fishery/cwp/handbook/M/en.*

[22]More information regarding the required gear marking scheme along the US Atlantic coast can be found at: *http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/.*

Trap/Pot Gear Marking



Surface Buoy Marking

Markings on trap/pot surface buoys need to identify the associated vessel or fishery with one of the following:

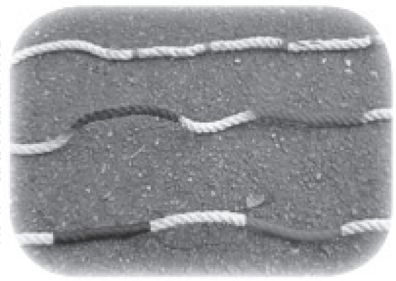
- The owner's motorboat registration number and/or US vessel documentation number;
- The federal commercial fishing permit number; or
- Whatever positive identification marking is rerquired by the vessel's home-port state.

When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5 cm) in height, block letters or Arabic numbers, in a color that contrasts with the colour of the buoy.

Buoy Line Marking:

Buoy lines are to be marked with three 12 inch (30.48 cm), colored marks: one at the top of the buoy line, one mid-way along the buoy line, and one at the bottom of the buoy line. Each colour code must be permanently affixed on or along the line and each color code must be clearly visible when the gear is hauled or removed from the water.

Note: If the color of the rope is the same as or similar to a color code listed above, a white mark may be substitued for that color code.



Gear Marking Color	Applicable Trap/Pot Management Area
RED	● Massachusetts Restricted Area ● Northern Nearshore Trap/Pot Waters ● Northern Inshore State Trap/Pot Waters ● Stellwagen Bank Jeffreys Ledge Restricted Area ● Great South Channel Restricted Area overlapping Lobster Management Area (LMA) 2 and/or the Outer Cape (OC) LMA.
ORANGE:	● Southern Nearshore Trap/Pot Waters.
BLACK	● Offshore Trap/Pot Waters; Great South Channel Restricted Area overlapping with the LMA 2/3 Overlap and/or LMA 3.

Fig.1. Excerpt from the 2014 US Northeast Trap/Pot Gear Guide Marking Requirements as part of the Atlantic Large Whale Take Reduction Plan.

Additionally, it is critical that whatever efforts developed are monitored after implementation in order to determine if fishing gear and technique modifications are effective and/or need to be altered. A monitoring plan was developed to determine if the fishing gear identification and mitigation efforts implemented have been effective in the US Atlantic fisheries[23].

As noted under Item 2.2, gear marking would be invaluable in helping to determine what types of COAFG and ALDFG pose a higher risk for large whale entanglement.

3.1.4.3 ASSESSING IMPACTS OF ALDFG AT THE INDIVIDUAL AND POPULATION LEVEL

A key difficulty in assessing the effects of ALDFG at the individual and population level relates to the difficulty noted above in separating out COAFG and ALDFG entanglements. For entanglements in general, it was noted that there may be a reporting bias associated with where effort is located (e.g. coastal species more often reported) and for species that float after death. As summarised in the 2010 entanglement workshop (IWC, 2012) scar studies looking at survivors show a high rate of entanglement ranging from 20-80% of the overall populations affected, with 8-33% for the North Atlantic right whale population entangled at least briefly each year (e.g. Knowlton *et al.*, 2012) and estimated mortalities of 2-4%. That is sufficient to be a threat to the recovery of endangered populations such as gray whales in the western North Pacific, some populations of right whales (e.g. North Atlantic right whales, North Pacific right whales, southern right whales in the southeastern Pacific) and Arabian Sea humpback whales.

3.1.4.4 IDENTIFYING ALDFG CETACEAN ENTANGLEMENT HOTSPOTS

The Workshop only briefly discussed this issue. The potential use of sonar and satellite technology (see Item 2.3.1) to map the distribution of ALDFG and identify hotspots was noted along with the limitations of this approach at present. Data collected through fisheries log book data may also provide useful information on rates of gear loss in different fisheries and regions but there is a lack of consistency in the extent and type of data collected in different fisheries and regions to truly identify hotspots. It was noted that the population of bowhead whales in the Bering-Chukchi-Beaufort Seas was a case for which lost gear has been identified as the most likely source of entanglement, due to spatial but not temporal overlap with the relevant fishery (Citta *et al.*, 2013).

[23] *http://www.greateratlantic.fisheries.noaa.gov/whaletrp/reports/5a_ALWTRP%20Monitoring%20Strategy.pdf.*

The Workshop noted that the identification of ALDFG hotspots (both in terms of where the gear is lost and where entanglements occur) is complicated by the lack of reporting of gear in the water (although some schemes exist, see Item 2.3) and the fact that animals can tow gear great distances. Difficulties in determining whether entanglements involved COAFG or ALDFG are discussed under Item 3.1.4.1. The value of modelling approaches was discussed under Item 2.3.3 and a recommendation relevant to this issue is given under Item 8.2.3.

3.1.4.5 GEAR MODIFICATIONS (ROPE TENSIONING OR WEAK-LINKS) AND NEW GEAR DEVELOPMENT

Gilman summarised efforts within FAO (Gilman *et al.*, In press) and elsewhere on gear technology methods to reduce ghost fishing by derelict gillnets and trammel nets. He noted that increasing gillnet filament diameter, modifying the weaves (e.g. using multi-monofilament instead of single monofilament), using larger floats on the top rope and heavier weights or lead-core on the bottom rope, and infusing compounds that can make the net stiffer (increase net tension), reduce the likelihood of entangling large organisms.

He noted that efforts to make nets more detectable, such as through net colour, thicker twine diameter and attaching corks or other visual markers within the net, has in some cases been shown to effectively reduce bycatch rates of marine mammals and turtles. Similarly, attaching materials such as thick polyester rope and chains to fishing nets, and infusing nylon nets with metal compounds such as barium sulphate and iron-oxide has the potential to reduce cetacean captures either because the materials increase acoustic reflectivity when using echolocation, increase the net's visibility or the infused metals increase twine stiffness.

He also reported on the use of less durable materials (e.g. thinner net twine diameter and weaker material) to produce a breaking strength that allows large organisms to break free of the gear and escape, which might reduce ghost fishing mortality. Gear technology has been developed to reduce the duration of the fishing power of ALDFG via designs that employ degradable materials (e.g. degradable FADs have been designed; degradable cotton fibre is still used in some gillnet fisheries; attaching floats using biodegradable materials has been trialled in a demersal gillnet fishery; degradable escape mechanisms are required in some trap fisheries). Degradable escape panels and cords can be used to reduce ghost fishing by traps, and are required in some fisheries. Synthetic gear materials have been developed that can be broken down by microbes and ultraviolet light. Simulated ALDFG demersal gillnets constructed of multifilament twine have been observed to have a shorter duration of fishing efficiency than gillnets constructed of monofilament twine.

Acoustic pingers and alarms and illuminating nets with chemical or battery-operated lightsticks might reduce bycatch but would likely be ineffective methods to reduce ghost fishing mortality once the energy source has drained.

In discussion, the Workshop noted the following:

(1) care needs to be taken that a solution to one problem does not create a new unexpected problem, e.g. making it easier for whales to break free of gear using weak links may increase debris amounts and thus ghost fishing, and use of degradable gear (e.g. that being developed in South Korea) may increase microplastic debris;
(2) possible solutions must take into account the resources of local fisheries and involve gear producers; and
(3) this topic will form a key part of the forthcoming IWC workshop on the prevention of entanglement in March-April 2016.

3.2 Other marine litter: macrodebris and microdebris

3.2.1 Overview of existing legislation and strategies to tackle marine litter (non-ALDFG)

3.2.1.1 INTERNATIONAL LAWS AND AGREEMENTS (BASEL CONVENTION, UNGA RESOLUTIONS A/RES/60/30 AND A/RES/63/111 ON OCEANS AND THE LAW OF THE SEA: INTRODUCTION TO EXISTING INTERNATIONAL INSTRUMENTS)

Baulch presented an overview of the international legislation related to marine debris. International legislation has been in place for over 25 years, with the objective of reducing terrestrial and marine sources of marine debris. However, there is mixed evidence regarding its success and oceanic sampling indicates that the problem has persisted or worsened (Derraik, 2002; Rochman *et al.*, 2013).

MARPOL Annex V is the international instrument that prohibits dumping of garbage at sea. The recent significant improvements in the provisions of Annex V were noted, as well as efforts by the IMO to standardise reporting of vessel waste disposal and its development of guidelines on what constitute adequate Port Reception Facilities. However, Baulch noted that there remain significant problems in the implementation and enforcement of Annex V, including a lack of mechanisms by which to verify compliance, particularly in those vessels below the tonnage limit requirements for Garbage Record Books. This tonnage limit means that 99% of the global fishing fleet is excluded from the mandate to have a Garbage Record Book or Garbage Management Plan, and there is therefore no mechanism by which to monitor compliance (Sherrington *et al.*, 2014). It has therefore been recommended that commercial vessels of all sizes should be required to have a garbage management plan and a garbage record book and that national authorities could provide a training programme as part of licensing procedures to improve compliance (Sherrington *et al.*, 2014). Enforcement authorities have highlighted that violations are almost impossible to detect and prosecute successfully and that fines are often low compared to the potential cost saving of discarding waste illegally.

The variation in adequacy and cost of port waste reception facilities (PRF) has been highlighted as a particular disincentive to compliance within the marine sector (Sherrington *et al.*, 2014). Provision of adequate PRF by countries and implementation of a no-special-fee system, where the costs of offloading waste are included into general port fees were essential measures to remove any incentive to dump waste illegally. With regards to international instruments aimed at preventing terrestrial sources of marine debris, whilst there is no binding international agreement, the valuable role of the various UNEP partnerships (GPA, GPWM, GPML), as well as the work being developed by CMS, IMO and CBD was identified, noting the importance of such frameworks for prompting coordinated regional action, including through the UNEP Regional Seas Programme and associated conventions. Legislative reform to remove barriers to compliance and mandate high waste management standards in marine and terrestrial industries is key to improving waste management, as are other voluntary measures, such as multi-stakeholder partnerships, education programmes, extended producer responsibility schemes and market based strategies. The latter can include measures to incentivise responsible waste management within industry sectors, as well as item-specific levies and bans (e.g. on single use bags, microplastics, beverage containers) which aim to change public use and behaviour and have often been highly successful at reducing waste generation.

In discussion it was noted that while there are often good legislative frameworks in place that are aimed at preventing

marine debris, their success has been hindered by poor implementation at national level, inadequate enforcement capacity and a lack of national programmes aimed at incentivising compliance and good waste management practices within industry. More information on levels of compliance would be helpful. It was also noted that the reform of MARPOL Annex V reform has recently been concluded.

3.2.1.2 UNEP REGIONAL SEAS PROGRAMMES AND GPA

Savelli reported on the UNEP Regional Seas Programme and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). There are 18 Regional Seas Conventions and Action Plans with more than 143 member countries. Conventions provide regional legal frameworks and are in many regions supplemented by Protocols. The GPA is a non-binding intergovernmental mechanism covering 9 source categories when established in 1995, one of which is marine litter. Global Partnership on Marine Litter (GPML), launched during the United Nations Conference on Sustainable Development, Rio + 20 in June 2012, is a voluntary open-ended partnership for international agencies, governments, businesses, academia, local authorities, non-governmental organisations and individuals. This launch complemented paragraph 163 of the Rio outcome document 'The Future We Want' which committed to take action by 2025 to achieve significant reductions in marine debris to prevent harm to the coastal and marine environment. Besides being supportive of the Global Partnership on Waste Management, the GPML seeks to protect human health and the global environment by the reduction and management of marine litter as its main goal, through several specific objectives.

UNEP provides the Secretariat for the GPML in line with the mandate received in the 'Manila Declaration on Furthering the Implementation of the GPA', and leads on the focal area on land-based sources of marine litter. FAO and IMO lead the focal area on sea-based sources of marine litter.

The GPML is initially guided by the 'Honolulu Strategy, which provides a global framework for prevention and management of marine debris' and works as a 'coordinating forum' for all stakeholders working in the area of marine litter prevention and management, thereby assisting stakeholders to complement each other's efforts. Various activities are ongoing at global, regional, national and municipal levels including:

(a) support for the internationalisation of the 'beat the microbead initiative';
(b) support for the 'Valuing Plastic' publication;
(c) in collaboration with FAO, a desk review/study of technologies and methodologies used to remove ALDFG from the marine environment;
(d) the development of methods to 'Estimate the Efficiency and Duration of Ghost Fishing, Estimates of Derelict Gear, Estimates of Megafauna Ghost Fishing Mortality, and Regional Fisheries Management Organization Management Measures'; and
(e) review and analysis of national and regional legal and policy frameworks for selected countries/regions where recovery and clean-up missions have been successful, including in Norway, the USA, and Australia and Korea and others.

The GPML has also supported the development of regional, national and municipal marine litter action plans as well as a demonstration project in Samoa.

3.2.1.3 UNEP/CONVENTION ON MIGRATORY SPECIES (CMS) ACTIVITIES

See Item 1.7.2.

3.2.1.4 SPREP REGIONAL ACTIVITIES

Donoghue and Haynes reported on the activities of the SPREP and commented that the Workshop was very timely to assist SPREP in its work. SPREP is the regional intergovernmental organisation responsible for the coordinated management and conservation of the environment of the Pacific Islands. It is composed of 21 Pacific Islands Countries and Territories (American Samoa, CNMI, Cook islands, FSM, Fiji, French Polynesia, Guam, Kiribati, Nauru, New Caledonia, Niue, Palau, PNG, RMI, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Wallis and Futuna) and 5 'metropolitan' members (Australia, France, New Zealand, UK and USA) with interests in the region. The SPREP region is approximately 98% ocean and coastal seas and covers some 38 million km^2, over 10% of the global ocean, most of which is contained within the EEZs of members.

Two of SPREP's four work Divisions (Biodiversity and Ecosystem Management, and Waste Management and Pollution Control) have a direct interest and mandate for improving regional management of marine debris. Marine debris has been a problem in the region for some years, and the other regional agencies with responsibilities for monitoring and managing fishing activities (Secretariat for the Pacific Community, SPC, and the Forum Fisheries Agency, FFA) have been collecting some data on an opportunistic basis. However, SPREP has only recently been able to devote resources to assessing the significance of this issue, through the following programmes that have been initiated within the last year.

(a) A postgraduate student (Ms Ana Markic) is being supported by SPREP to undertake a PhD at Auckland University to assess the provenance and distribution of marine debris in the SPREP region and its impact on marine wildlife.
(b) In association with the South Pacific Whale Research Consortium, SPREP has recently launched a web-based programme to report stranded whales and dolphins (*http://apodstrandings.org*). It is hoped that this will encourage a better rate of reporting of strandings than has occurred in the past and result in a larger number of necropsies to determine whether debris was potentially a causative factor in any given stranding event.
(c) SPREP has begun collaborations with the IWC to improve the level of training and the amount of data reported from the region. Very recently, Mattila conducted a training event in whale disentanglement with officials and NGOs from Tonga and Vanuatu, and has left behind a specialist kit for future use.

Fundamentally, SPREP is not a research agency, but a co-ordinating body that relies on developing collaborations with technically skilled parties with a shared interest. SPREP appreciates the invitation to this workshop and the opportunity to participate in future collaborations with the IWC, government agencies and institutions, and NGOs with an interest and experience in addressing the growing problem of marine debris and its impacts on the marine environment, and on cetaceans and other iconic marine wildlife of the Pacific Islands.

A number of recommendations were developed from the discussion that followed this presentation and these can be found under Item 8.1.

3.2.1.5 NATIONAL AND REGIONAL PLANS FOR PREVENTION AND RECOVERY (INCLUDING LEGISLATION AND OTHER INITIATIVES) – EFFICACY, GAPS AND LESSONS LEARNT

Wallace reported that the NOAA Marine Debris Program undertakes many activities in order to prevent the occurrence of marine debris. The US Congress has authorised and mandated the Program to identify, determine sources of, assess, prevent, reduce, and remove marine debris, with a focus on marine debris posing a threat to living marine resources and navigation safety; and to provide national and regional coordination to assist States, Indian tribes, and regional organisations in the identification, determination of sources, assessment, prevention, reduction, and removal of marine debris.

The focus of the US program is to work with local partners to conduct on-the-ground outreach to encourage behaviour changes. There have been regional action plans developed in Hawaii, the West Coast and the Great Lakes. Plans are currently being developed in Florida and the southeast United States. All of these plans include prevention as a major component. Monitoring is an important part of determining baseline levels of marine debris and to determine if prevention efforts are working. NOAA has developed protocols that many partners are using to monitor levels of debris. NOAA also has a curriculum that can be shared with educators and funds specific projects around the country. Examples of these projects include teacher workshops with the Monterey Bay Aquarium, the Gyre Exhibit at the Anchorage Museum, the Teen Marine Debris Summit with the Mystic Aquarium, and exhibits at the National Zoo. Wallace concluded that the key lessons learned included that prevention can be low cost, while some activities can be large scale, regional hands on approaches seem to have the biggest impact, and it can be difficult to measure success.

The Workshop noted that some of the well-developed initiatives now being deployed in the USA might help to inform initiatives elsewhere in the world.

3.2.2 Data needs and recommended research actions to inform longer term management strategies for addressing the impacts of marine litter on cetaceans

3.2.2.1 ASSESSING IMPACTS OF INGESTION (MACRO AND MICRO) AT THE INDIVIDUAL AND POPULATION LEVEL - REPORTING OF INCIDENTS TO IWC

Baulch presented results from a literature review of data on debris ingestion by cetaceans (Baulch and Perry, 2014a; 2014b). The review found that ingestion of debris has been documented in 48 (i.e. 56%) of cetacean species, with rates of ingestion as high as 74% in strandings analysed from certain populations. Plastics were the dominant type of debris ingested, with parts of fishing gear also frequently ingested. Debris-induced mortality rates of 0-10% have been documented in stranded animals where a cause of death could be determined, suggesting that debris could be a significant threat to some populations; however data on ingestion and mortality rates is only available for a few species and regions and there is no information on rates of sub-lethal pathology in stranded animals examined. A significant problem is the lack of storage of information on debris interactions by strandings networks.

The Workshop noted that recommendations had been made by the first IWC Marine Debris Workshop (IWC, 2014a) and endorsed by the IWC Scientific Committee (IWC, 2014b, pp.18-19). These included necropsy protocols and the addition of specific data fields to the national progress reports made to the IWC, in order to collate data on rates of debris interactions and thereby improve understanding of the threat that marine debris poses to cetaceans and to inform prevention and mitigation actions.

Baulch also provided a brief review of current microplastics research. It was noted that oceanic sampling indicates that the abundance of microplastics has significantly increased in some areas (Goldstein *et al.*, 2012; Rochman and Browne, 2013), and that ingestion has now been demonstrated in many marine species, including plankton, fish, and (using phthalates as a tracer) also in Mediterranean fin whales (Fossi and Depledge, 2014; Frias *et al.*, 2014; Lusher *et al.*, 2013; Van Cauwenberghe and Janssen, 2014; Wright *et al.*, 2013). However, the physiological and toxicological effects of microplastic ingestion for cetaceans remain poorly understood. Specific recommendations regarding research priorities for microplastics were made by the first workshop on marine debris (IWC, 2014a).

In discussion, the Workshop **welcomed** the addition of microplastics research to the IWC Pollution 2020 work plan. It noted that it would be helpful to many initiatives to more widely disseminate the research recommendations made by the first IWC workshop on marine debris and this is the subject of a recommendation under Item 8.6.

3.2.3 Immediate opportunities and recommendations for policy/management action by the IWC on 'other' [non-fishing derived] debris

The Workshop took note of the research recommendations made by the previous IWC Workshop on marine debris and its recommendations on policy and management can be found under Item 8.

4. THE ROLE OF THE IWC AND OTHER INTERNATIONAL BODIES IN ADDRESSING MARINE DEBRIS

The potential role of the IWC alone, and in concert with other IGOs, was considered first by a number of small break-out groups. These groups also discussed the major impediments to progress on marine debris. In introducing this topic, Simmonds suggested that the strengths of the IWC include its regular reviews of the status of cetaceans and the threats that they face as conducted primarily by its Scientific Committee (a body of some 200 scientists from across the world which meets on an annual basis). He noted that the Scientific Committee's cutting-edge work extended to all cetacean species, which between them occupy all the world's oceans from the tropics to the poles and some of the larger river systems. Information coming from the IWC Scientific Committee and the IWC's ongoing disentanglement initiatives could be of assistance to other IGOs in helping to inform their work, including outreach to policy makers and the public. In many parts of the world, cetaceans can be good educational and outreach tools that can help relate the problems of the oceans to wide audiences.

Simmonds added that whilst the IWC may not be the lead agency in tackling marine debris it had considerable potential to facilitate the work of other agencies. Collecting and sharing information between all concerned parties that leads to effective actions to address marine debris would seem to be a priority and so the challenge may be how best to achieve this.

The Workshop identified a range of impediments to progress in reducing sources of marine debris. In particular these included:

(a) the need for more innovative partnerships that can help to reach out to the public to shift market forces towards more sustainable practices;

(b) a general lack of engagement with the relevant industries, including fisheries and waste management on land;
(c) a general lack of funding and resources;
(d) inadequate waste management standards on land and at sea;
(e) the lack of opportunity (including the lack of an appropriate platform) for sharing effective solutions to marine debris and prevention solutions; and
(f) identifying problems related to high IUU and unsustainable fisheries (leading to discarding of gear and high-risk fishing practices) and that industry needs to give consideration to the full environmental costs of different types of debris.

Following the break-out group work and further discussion and prioritisation in plenary, the Workshop concluded a number of recommendations (see Item 8).

5. DISENTANGLEMENT

5.1 Review of disentanglement training programmes and key needs/opportunities for growth

5.1.1 The IWC programme

As noted earlier under Item 1.6.2, much of the 2011 IWC Workshop on entanglement (IWC, 2013), was focused on developing a strategy, curricula and advisory group to carry out the capacity building recommended at the first Workshop (IWC, 2012). The result was a three-pronged strategy of: (1) providing an overview of the issue to relevant Government decision-makers and provide a context for the IWC endorsed capacity building; (2) discussions with appropriate resource managers about feasible team and network structure; and (3) detailed entanglement response training by members of the IWC expert advisory group.

The two-day training consists of the first day on land, largely in a classroom, where all participants are given an overview of the issue globally, with background information on how other countries are approaching this problem. In addition, the host Government is asked to provide a brief overview of what is known for the region, including: species and gear involved, examples of local events, and any local regulations. An overview of the science and methods used to understand the issue is also presented, and two overarching 'principles' are reiterated. Firstly, that human safety must come first, and secondly, that disentanglement is only the first step; prevention is the ultimate solution to this problem, and all responses to an entangled whale should include gathering information (safely) that will eventually lead to prevention.

The remainder of the first day is spent going over safe disentangling procedures using many images and video clips to illustrate the proper use of tools, techniques and safe decision-making procedures. The number of attendees for the first day in the class is only limited by the size of the room. However, not all of the attendees will be candidates for the hands-on training on the water, during the second day.

The second day takes place on the water. Two small boats (per trainer) are used; one acting as the 'whale' and the other as the 'rescue' boat. The 'whale' boat tows a long rope with a variety of objects on the end (e.g. buoy, tangle of net, etc.), as the 'rescue' boat makes multiple approaches using various tools. As only two trainees are in the 'rescue' boat at any time, and the process is time-consuming, only 10-12 trainees can be accommodated.

Since the 'hands on' work releasing a whale can be dangerous, and the second day can only accommodate 10-12 trainees, the following consensus criteria are provided in order to help identify key trainees for the second day:

(a) experience with whale behaviour and driving small boats around whales;
(b) experience with fishing gear and with handling lines under powerful 'load' or strain;
(c) experience with small boat safety;
(d) adequate physical fitness;
(e) availability to respond (there is no point training someone who will not be around or available to respond);
(f) level-headedness (is able to remain calm and think clearly in stressful situations); and
(g) authorisation of the relevant authority and, if applicable, has the requisite insurance.

At the conclusion, the trainees are evaluated and the trainer works with the relevant authority to identify key participants who may be able to undertake a three week apprenticeship with one of the existing networks. So far these apprenticeships have been conducted at the Center for Coastal Studies in the USA, as they have: rescue facilities, proximity to whales, ongoing entanglement related research and proximity to other valuable sources of related experience (e.g. necropsy and stranding, fishing gear research, etc.). This is effectively training future trainers for the country represented.

IWC training requires that the member state is aware of and approves that training takes place; in several instances a country will request and support the training. Requests that come through the IWC to the expert trainers are prioritised using the following criteria.

(a) Conservation: how endangered is the whale population and how significant is the entanglement impact?
(b) Human safety: are well-meaning but untrained people currently responding with dangerous techniques?
(c) Animal welfare: how many whales are likely to benefit from the range states developing a response network?
(d) Socio-economic impact: is the impacted fishery artisanal, or subsistence?
(e) National support: has the country requested or sanctioned the training?
(f) Added impact: does the training fit into and/or encourage other productive initiatives?
(g) Funding: is there logistical and financial support?

A productive approach has been to partner with regional IGOs in order to provide the training in fulfilment of regional action plans (e.g. the SPAW marine mammal action plan in the Wider Caribbean, and the SPREP whale and dolphin action plan in the South Pacific). The global entanglement response network now includes networks from 19 countries, and upcoming training is planned or in discussion for Mexico, Chile and Russia.

In conclusion, training needs to better incorporate debris into its curriculum and needs political, logistical and financial support to continue. In particular, it was noted that the IWC had identified some regions and populations (e.g. Northern and Southeast Pacific right whales, Arabian Sea humpbacks and Western grey whales) as high priority for capacity building due to their conservation status and suggested that partnering with regional IGOs may be a way to accomplish that.

In discussion, the Workshop **recognised** that the IWC has long-standing engagement, both formal and informal, with many of the IGOs working on this issue. In addition, it **highly commended** the recent collaborative work

accomplished on the large whale entanglement issue, which for whales is a major component of this important topic, with some of these IGOs, as well as NGOs and countries. In particular, it highlighted the recent partnerships with UNEP-CEP-SPAW, which co-sponsored human impact and entanglement training in the English, French and Spanish speaking Wider Caribbean, the cooperative work with the Permanent Commission of the South Pacific for training in Ecuador, including participants from Chile, Peru, Colombia and Panama, and the recent training in Tonga, which included support by the USA (NOAA), SPREP and WAP.

Kwann expressed the view that the regional UNEP programmes and their NGO partners in the Middle East would probably be interested in partnering in that region. It was also noted that, prior to the development of the 'official' IWC training, that NOAA and NGO partners had conducted training for subsistence fishers in Zanzibar.

In response to questions about tool costs and longevity, Mattila noted that an important consensus principle of the expert group was that, given the inherent danger in rescue efforts, the tools should always be accompanied by the expert training in how to use them safely and effectively. So far the trainers have been able to leave tools after the training with the appropriate authority in each country or region with the agreement that they may be copied for replacement, and expansion of their network, hopefully through trainings conducted by their successful apprentices. Some participants also noted that some of the same tools, and similar ones, have been provided, with proper instruction, to fishers so that they can help release turtles and other large animals from their gear (e.g. Hawaiian longlines).

In discussion of the data collected during and after entanglement events it was noted that, because gear can vary widely from region to region, specific training on gear (or debris) identification could not be provided, but that many established networks work with fishers and fishery engineers, in order to make determinations about origin. The value of understanding both the gear and debris (e.g. on the nearby beaches) in the area that the entanglement may have occurred, as well as the gear on the animal itself was noted.

The Workshop was pleased to hear that the IWC expert group is planning to meet within the year, and that assisting the IWC in developing the fields and guidance for a global cetacean entanglement database will be a major agenda item for that meeting. Incorporating the most current information on differentiating between actively used and ALD fishing gear, would be very useful (see Item 3.1.4.1).

Finally, while the generous support of the USA (NOAA) and WAP has accomplished a reasonable amount and was graciously noted, increased and sustained funding for continuing and expanding the programme is needed. It was noted that the IWC has a dedicated 'entanglement fund' into which countries, IGOs and NGOs can make voluntary contributions for this and related work.

5.1.2 NOAA

Saez reported on some of NOAA's recent work along the West Coast of the USA. NOAA's NMFS West Coast Regional Office (WCR) has been compiling data on entanglements and large whale migratory movements to identify areas of overlap and increased risk of entanglement[24]. The results of that effort are presented in a NOAA Technical Memorandum (Saez *et al.*, 2013). NMFS WCR hosted a two-day workshop to review, share, and analyse the information from Saez *et al.* (2013) (along with results from similar analyses from other fisheries in the Pacific and Atlantic Oceans and other current research with interested stakeholders), to promote feedback, and consider next steps in achieving the long-term goal of reducing large whale interactions with fixed gear fisheries.

NMFS WCR workshop participants included scientists, managers, and experts with knowledge of large whales, large whale entanglement and fisheries. Presentations spanned several topics including: risk assessment models; large whale abundance, distribution and behaviour; fishery characterisations and management regimes; and gear reduction/recovery efforts. The NMFS WCR workshop concluded that although the models presented provide direction on where whales are more likely to encounter commercial fishing gear, more research is needed to understand the conservation concerns and the mechanisms of large whale entanglement to help better inform future management actions aimed at reducing whale entanglement risks. In the interim, NMFS WCR workshop participants identified action items that may be pursued such as gear marking and engagement with the commercial fishing industry through port-based meetings.

Participants at the NMFS WCR workshop had identified the four following recommendations concerning reducing large whale entanglements off the US west coast:

(1) engage with commercial fishermen and commercial fishery managers to better understand the fisheries and what measures may be taken to fill existing data gaps;
(2) address the unknowns surrounding large whale entanglements:
    (a) conduct research which may be needed to encourage or support some fishery management actions or legislation changes;
    (b) identify and clarify the level of conservation concern surrounding population-level impacts from entanglement for different whales species;
    (c) conduct fine scale research on areas identified as having high co-occurrence of fishing gear and large whales; and
    (d) research mechanisms by which whales become entangled in gear;
(3) evaluate the feasibility of gear modifications, e.g. research could be conducted to increase the number of traps per line, which could lead to a reduction in entanglement risk by reducing the number of vertical lines in the ocean with which whales could interact; and
(4) support lost gear and marine debris removal efforts to reduce the risk of whale entanglements.

NMFS WCR staff are planning the first set of port-based fishermen engagement meetings for the end of September 2014, modelling these on successful meetings with fishermen in Alaska. The goals of the meetings include: sharing NMFS research, discussing possibilities of researching alternative gear configurations, inquiring about the concern of the fishermen regarding entanglements of whales/other marine animals as well as gear loss, as well as gauging interest in joining the disentanglement network.

In addition NMFS WCR staff are planning a workshop for September 2014 to discuss recent efforts to quantify large whale occurrence and movements along the US west coast. The intent is to provide a forum for rich discussion on the latest work on large whale distribution and occurrence, including how results of work directly relate to management, conservation and protection of large whales and other marine resources.

[24] *http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/fisheries_interactions.html*

Activities	Project Outputs	Short-term Outcomes	Measure	Long-term Outcomes
Develop information material explaining impacts of derelict gear and the reporting system	Rack card and letter to fishermen	Improved reporting of lost nets Improved ability to locate and retrieve lost nets Database populated with accurate lost net locations Increased awareness of impacts of derelict gear among fishermen	Ratio of newly lost nets reported by fishermen to those reported by others % of reports made within 24 hours % of reports with accurate location information	Reduced impacts of derelict fishing nets on marine species and habitats Newly lost nets are removed before they become derelict
Mail reporting information annually to non-tribal commercial fishermen	800 letters mailed to licensed gillnetters			
Communicate annually with Tribes previously contacted	15 phone conversations with tribes			
Meet annually with Tribes not previously contacted	9 meetings with tribes			
Develop advertisement explaining derelict gear impacts and reporting system	Print ready advertisement			
Advertise in commercial fishing publications	4 advertisements in fishing publications			
Outreach at marine/fishermen events	4 presentations/outreach activities at marine/fishermen events			

Fig.2. A good example of how activities can be evaluated by identifying measurable outcomes (see text).

It was noted that, while the IWC has been interested in whale welfare as well as the conservation aspects of entanglement, the NOAA primarily concentrates on its regulatory mandates which are focused on conservation and species recovery. In discussion many participants mentioned that focusing on the welfare issue too heavily may alienate fishermen, who are essential to developing solutions. In virtually all aspects of the ALDFG issue, engagement with the fishing sector has been recognised as a key component. The Workshop recognised that the approach taken and words used were very important to success. Many noted that one to one discussions outside of formal meetings was often the most successful approach, especially at the beginning of attempts to establish co-operation.

In discussion, it was suggested that fishing gear sellers may be able to indicate how much new gear is purchased annually and may therefore help give some indication of the level of loss of various gear types.

As with understanding and preventing ALDFG, the Workshop **strongly encouraged** including the fishing sector in the growth of the entanglement response network, especially in high priority areas, and also during the follow up examinations of the gear removed from whales. Smith noted that on the Atlantic coast of the USA, former fishers examined the gear removed from whales, and they were also the best liaisons to the fishing community.

5.2 Opportunities for marine debris entanglement reporting outreach (e.g. fishermen, shipping)

Mattila presented briefly on behalf of Lyman (who was called away due to the expected hurricanes and relayed his apologies). Lyman has participated in a number of workshops with the fishing communities in Alaska which while conducting outreach on the entanglement issue, have also provided the opportunity to listen to and gather ideas on prevention through modified gear and practices. One result was a laminated fact sheet with information on what to do if a fisher encounters an entangled whale, which also contained practical tips from fishers on how to prevent entanglement in their gear (if they are tending it). Lyman noted that it was extremely valuable for managers to 'immerse' themselves in the fishers' world, including going to sea with them on occasion.

He also highlighted an outreach video produced by NOAA, which is targeted at all mariners and has information about what they can do upon encountering an entangled whale. The video is available from NOAA and it was noted that an abbreviated version is available at *http://iwc.int/entanglement.*

In discussion, as noted elsewhere in this report, it was suggested that the issue of ALDFG be integrated into both entanglement response capacity building, and similar themed workshops with the fishing sector.

6. INFORMATION AND OUTREACH ISSUES

The Workshop noted that a number of the presentations and programmes already discussed in its report had referred to the importance of public outreach and the involvement of the local community. In this section, two example programmes were considered more specifically: the Northwest Straits Foundation and the work being undertaken by UNEP.

6.1 Public outreach, including a communications strategy for IWC

6.1.1 Northwest Straits Foundation

Drinkwin reported on the work of the Northwest Straits Foundation from Puget Sound in Washington State, USA, in particular its communications and public outreach related to its ALDFG Fishing Gear Program. Puget Sound has a unique and severe problem with ALDFG because of its high relief rocky habitat and long history of salmon gillnet fishery. Since 2002, the Northwest Straits Foundation, working as part of the Northwest Straits Initiative, has removed 4,925 ALDFG nets, weighing 365 tonnes, and spanning 708 acres. Found entangled in these nets were over 300,000 animals, representing more than 240 unique marine species, including harbour porpoise and other mammals, marine birds, protected fish and commercially valuable invertebrates. Projected annual impacts based on a published catch rate model exceed 3 million animals annually entangled by the nets removed.

The Northwest Straits Foundation has engaged in program outreach since the program inception. As in any communications strategy, there are some basic steps to make sure your efforts are focused and effective (see Fig. 2). Steps include: identify your goals (what do you want to happen?); identify your target audience (who do you want to take action?); how do you reach them (what are you going to do?); how do you know you've succeeded (what are you going to measure?). The Foundation's communications

approach has been taken in stages. Initially, the goal was to increase awareness of the problem of ALDFG gear by resource managers. Next, the goal was to build support for the removal programme from funders. Currently, the goal is to increase timely and accurate reporting of newly lost fishing nets by active fishermen. Future activities may focus on preventing crab pot loss by recreational crab fishermen.

One of the focuses of the Foundation's current work is to increase reporting from fishermen. For tribal fishermen, the Northwest Straits Foundation employs a consultant to meet annually or communicate by telephone annually with tribal fisheries managers. Support materials are provided when requested. For non-tribal fishermen: annual mailings are sent to all licensed fishermen; advertisements have been placed in *Pacific Fisherman* magazine; and information is provided through the Washington Department of Fish and Wildlife regulatory information to fishermen. The Northwest Straits Foundation has measured success by documenting how many reports of newly lost nets were received and what per cent of those reports came from fishermen and how helpful were the reports towards finding and retrieving the nets. Over an eighteen month period, 23 lost net reports were received, with three coming from fishermen. Reports resulted in 10 nets retrieved.

The Workshop **commended** this work as an example of excellent use of various outreach tools, whilst **recognising** that different strategies may be needed in different parts of the world with regard to the best approach to different target audiences. In that context, it was noted that the IWC needs to identify who its 'target audience' is for any outreach that it considers.

6.1.2 UNEP

Savelli summarised some of UNEP's education and outreach projects on the topic of marine debris that are either planned or currently underway. These vary considerable, depending on their target audience, region or intended messages. Some of the projects that she highlighted included: sponsoring competitions for students and faculty at Universities, with challenges to develop better ways to locate, recover, communicate and prevent marine debris; online courses and sources of information on the topic; photographic competitions; professional documentaries; development of 'edutainment'; traveling exhibitions for museums and public spaces (e.g. subways and airports); interactive kiosks (e.g. at aquariums); involvement of celebrities (e.g. actors, sports and other well-known individuals); working with professional public relations and marketing companies; and the use of new communication technologies (especially Apps) for communicating to and engaging with the public.

In particular a key principle, especially when working with the general public, is to give them 'actions that they can do'. Apps in particular might represent good opportunities to both educate and engage. In addition, IGO, NGO and Government personnel who are attempting to advance a message on this (or any) topic, should strongly consider media training.

The Workshop **commended** UNEP on the variety, scope and creativity of their many projects. In particular, it **recognised** the importance of getting good, accurate information to all target audiences. It also noted, especially in the case of some of the more emotional aspects of debris' impact on animals, that it can be very helpful to responders if the public, industry and government, have solid information in advance. During any high profile events (e.g. an entangled whale), it is a good time for all stakeholders to use the opportunity as a 'teachable moment' with shared common talking points, where possible.

6.1.3 General outreach matters

The Workshop reiterated a common theme that it takes all stakeholders working together to find a viable long-term solution to the problems posed by debris. Keeping all stakeholders onboard can be difficult at times but the results are longer lasting. In this regard it was noted that an incident where a fishermen was penalised for helping release a whale, in the northeast USA, disrupted an ongoing working relationship and that this has the potential to make fishermen reluctant to help.

With respect to the public (or most audiences) it is important to explain what they can and should do to help. There was some discussion about which audience is the highest priority to affect change. This will depend on the particular type of change desired, in some instances the best target may be managers and politicians but in others it may be the broader public; politicians often respond when many people demonstrate their desire for change.

Several participants noted the use of new technology and social media as a powerful tool for communication and engagement, and much of this engagement is measurable. In particular, UNEP and others are interested in Apps[25] as a way to educate and engage. However, when considering some of these tools as a way to collect data, developers and proponents need to be sure that they understand and communicate clearly what is required, otherwise there is the risk of collecting unreliable data and disappointing users who may have high expectations.

Some suggested that when using mass media for communication or 'edutainment', celebrities can be very helpful in getting attention; the value of undertaking media training when dealing with the mass media was stressed. The value of images, video and art was also highlighted. This is especially true for any 'captured' audience, whether the public in an airport, cruise ship or commissioners in a conference hall. 'Calendar events' can also help to draw attention to issues as witnessed by events like 'whale day' and SPREP's upcoming 'year of the whale'.

With regard to how the IWC and other IGOs can best communicate with the relevant target audiences, the Workshop **agreed** that the report of this Workshop should be distilled and highlighted into an executive summary for the IWC's member countries and those of other IGOs. This could be placed on the IWC's new and expanding web site. In addition, it was suggested that the IWC, member countries or NGOs might hold side events where feasible at meetings of the parties. One potential opportunity might be to participate in COFI 2016 side events addressing bycatch and incidental capture of non-target species.

The Workshop also discussed how outreach may lead to better data. This would most likely focus on the fishing sector, but could include all mariners and beach users. It was noted that gear marking can and should more often be portrayed in a more positive light to the fishing industry as a tool to reduce gear loss, unintended biodiversity impacts and to distinguish bona fide gear from IUU gear. Finally, the Workshop noted that there is a tremendous amount of good information on this topic available from a variety of sources, in fact so much that it can be overwhelming, and thus it needs to be 'distilled' to the needs of the target audience.

[25]For example, NOAA has a marine debris tracker: *http://www.marinedebris.engr.uga.edu/*.

7. IDENTIFYING PRIORITY RESEARCH AREAS (FROM THOSE IDENTIFIED ABOVE) AND POTENTIAL SOURCES OF FUNDING

The Workshop recognised the funding implications of many of its recommendations and **acknowledged** that these were beyond the funding ability of the IWC alone and in many cases related to work beyond simply cetacean issues. It also noted ongoing work within the IWC to consider alternative sources of funding to the present model. A recommendation on this issue is given under Item 8.5.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Collaboration

The Workshop **emphasises** that the issue of marine debris, while important for cetaceans, was a major environmental issue in its own right that was already the subject of a number of important international and national initiatives. There is a need to identify a coordinating body to review all of the international efforts related to marine debris and compare the resolutions and recommendations, identify those that overlap and facilitate prioritisation and implementation (e.g. the UNEP Global Partnership on Marine Litter[26]).

It further **emphasises** that any lack of strong evidence of quantified impacts for some cetacean species and some debris types at present should not preclude efforts to remove existing debris and prevent future accumulation in the marine environment. It also **agrees** that, from an animal welfare perspective, the absolute number of cetacean entanglements and the associated suffering and times to death are unacceptable, irrespective of population level effects.

The Workshop **agrees** that the IWC's primary contribution should be to ensure that cetacean-related issues and specific impacts on cetaceans are adequately represented within existing marine debris initiatives and that its strong scientific and other expertise is made available in collaborative efforts.

It **strongly recommends as the highest priority** that the IWC and its Secretariat work together with the Secretariats of the other major IGOS and RMFOs relevant to this issue to ensure consistency of approach, synergy of effort and collection and exchange of information to develop appropriate mitigation strategies that recognise that: (a) prevention is the ultimate solution; but that (b) removal is important until that ideal is realised.

It also **recommends** that individual IWC member countries collaborate with such initiatives and that the IWC continues to highlight issues surrounding marine debris and cetaceans.

The Workshop also **recommends** that every effort is made to work with fisheries, terrestrial waste management industries and other relevant industries and NGOs as appropriate. Understanding both the extent of the actual and potential threats to cetaceans as well as the development of mitigation measures cannot be achieved without industry involvement. The present workshop has begun that process but increased industry participation at relevant future workshops and other IWC initiatives (see below) is strongly encouraged. In addition, the IWC Secretariat and Member Governments should explore opportunities to build awareness and collaboration with the commercial sector, for example at industry events.

Finally, the Workshop **recommends** that the IWC (and other IGOs) encourage their members to review national level implementation of MARPOL Annex V and other conventions relevant to marine debris reduction. The IWC should **encourage** its members to prioritise the strategic use of a range of measures to improve marine and terrestrial waste management, including national legislation and policy, stakeholder partnerships, industry training schemes and economic tools aimed at reducing public consumption of key types of debris such as packaging waste.

8.1.1 IMO

The Workshop noted that the IMO, within the context of MARPOL Annex V, is the relevant UN agency with which to collaborate on the plastics (including fishing gear) that are disposed of at sea as well as to gather information on Member States enforcement and industry compliance with the MARPOL Annex V prohibition on discarding of other vessel-generated garbage. GISIS (Global Integrated Shipping Information System) provides a searchable database of port waste reception facilities and this is a potentially valuable tool to help decrease ALDFG and other marine debris. It **recommends** that the IWC and IMO Secretariats consider the most effective way (e.g. via IMO's Marine Environment Protection Committee) to request that the GISIS port reception facility database is updated to specify which ports accept end of life fishing gear, including any restrictions on the gear they accept and additional useful information (such as recycling potential) and to encourage an expansion of the provision of no-special-fee port reception facilities.

8.1.2 SPREP

The Workshop **welcomes** information that SPREP will report annually to the IWC on progress with initiatives on the issue of marine debris. It **encourages** SPREP to work with regional and international agencies on existing and new initiatives to address the problem of marine debris including its impact on cetaceans.

8.2 Data needs and research recommendations

The Workshop **endorses** the research recommendations from the previous workshop (IWC, 2013) and the recent Scientific Committee meeting (IWC, 2015) including incorporation of data on marine debris into IWC National Progress Reports in a standard format and development of a global IWC entanglement database. The items below are expansions or additions to those recommendations.

8.2.1 Improved information on fishing gear including gear marking

There is sufficient evidence to show that entanglement in fishing gear can be a significant mortality factor affecting the conservation status of several endangered large whale populations (e.g. North Atlantic right whales, gray whales in the western North Pacific, humpback whales in the Arabian Sea) and is perhaps the major human activity affecting small cetacean populations worldwide (e.g. Read *et al.*, 2006) including one critically endangered species, the vaquita. However, the Workshop **agrees** that while at present COAFG was the major factor, there was insufficient evidence to reliably assign a precise proportion of entanglements to either COAFG or ALDFG (or both). It therefore **recommends** that a concerted effort be made to collect data using a standard approach that will allow a better assignation of entanglements (see Item 3.1.4.1); this matter will be discussed further at the 2015 workshop of the Global Entanglement Response team where consideration could be given to the development of working guidelines on differentiation methods which could be regularly reviewed as knowledge improves.

[26] *http://www/marinelitternetwork.org/page/global-partnership-marine-litter.*

The Workshop also **agrees** that the development of priorities for mitigation strategies for cetacean entanglements (both commercial and other active fishing gears and ALDFG) was hampered by a lack of reliable information on a number of factors related to gear including: gear types, loss rates of the various gear types, the persistence of ghost gear by type as a threat in the water column, and the 'fishery of origin' of ghost gear. Recognising past and existing efforts, especially within FAO, with respect to the marking of gear, it **recommends** that the IWC encourages COFI to conclude its work on gear marking and that the IWC participates in technical work associated with its finalisation, this process, drawing attention to the value that gear marking can contribute to mitigation approaches. In particular, it noted that a 'low-tech' gear marking scheme in combination with examinations of gear removed from whales would be particularly important to resolve three key questions: (1) the region in which gear is set; (2) the fisheries from which gear came (e.g. traps vs gillnets); and (3) the part of fishing gear from which it came (e.g. buoy lines *vs* groundlines between traps).

The Workshop also **recommends** that the IWC encourages disentanglement and stranding teams to collect detailed information on entangling gear/material that is removed from whales, and on marine debris present in the immediate environment of the entangled or stranded whale (although this must be interpreted carefully given the great distances whales can travel with gear), in order to improve collective knowledge of the scope and source of entangling debris (including COAFG *vs* ALDFG gear). This should include improving instructions for how to discern COAFG *vs*. ALDFG gear (see Item 3.1.4.1), and aiming to move from subjective to more objective assessments of gear, ideally with the knowledge and expertise of local fishermen.

8.2.2 Specialist Workshop

The Workshop **endorses** the forthcoming IWC Workshop (anticipated March-April 2016) on prevention of the incidental capture of cetaceans. It **agrees** that this should incorporate discussion of entangling ALDFG as well as in-use gear. It **reiterates** the importance of ensuring participation of experts from industry and relevant IGOs especially FAO. The Workshop noted that there is emerging evidence that individual human behaviour plays a significant role in the introduction of anthropogenic materials into the marine environment in the context of fishing equipment (and indeed marine debris more generally). The importance of individual behaviour and operator proficiency (e.g. some individuals using the same gear as others may have higher bycatch rates and gear loss rates) should be considered as part of mitigation strategies and addressing this may in some cases prove more effective than general, industry or sector-wide measures.

8.2.3 Modelling

The Workshop **requests** that the IWC Scientific Committee explores ways of combining estimates of oceanic debris and information on cetaceans to identify priorities for mitigating and managing the impacts of marine debris on cetaceans as discussed under Item 2.5.

8.3 Consideration of the use of the IWC Conservation Management Plan approach

The IWC has developed a Conservation Management Plan approach that has thus far been used for southeast Pacific right whales, South Atlantic right whales and gray whales in the western North Pacific and other populations are being considered for candidate CMPs (e.g. Arabian Sea humpback whales). The potential for threat-based CMPs was also anticipated and the Workshop was asked to consider whether the issue of marine debris should be considered directly in that context or indirectly through individual population CMPs (entanglement is an important component of existing CMPs). Guidelines for the development of CMPs can be found on the IWC website[27].

As highlighted in this report, prevention and mitigation related to cetaceans and marine debris is a broader issue that cannot be addressed by the IWC alone; thus should the IWC agree that a CMP be developed it is essential that a broad range of stakeholders including IGOs are involved. The Workshop **agrees** that before going ahead with the development of an IWC CMP focussed on marine debris, the IWC's Standing Working Group on CMPs should initially consult with the relevant IGOs to consider how this concept fits best within existing initiatives. In doing so the CMP Steering Group should consider establishing a Marine Debris sub-group to work on this issue.

Components of a CMP or other approach should include: consideration of the development of best management practices for preventing cetacean entanglement in marine debris (this will be part of the agenda for the 2016 IWC incidental catch Prevention Workshop); and the possibility of working with relevant stakeholders on one or more pilot projects to address ghost gear in specific areas.

8.4 Global Cetacean Disentanglement Network

The Workshop **commends** the present IWC Global Cetacean Entanglement Response Network, recognising its value both from an individual animal welfare perspective as well as at the population level, especially for threatened and endangered populations. The network is extremely valuable and effective in building capacity and raising awareness. The Workshop therefore **recommends** that the IWC continues to support and develop this network, and carefully considers incorporating the issue of all marine debris into the training programme. This could include the dissemination of information on gear identification, data collection and necropsy protocols which were developed during the first workshop on marine debris (IWC, 2014a). The Workshop **stresses** the importance of involving the local fishing communities in the training.

The Workshop **encourages** all members and non-members of the IWC to take advantage of this network especially in those regions where entanglement represents a threat at the population level (e.g. western Pacific, eastern South Atlantic, and Gulf of Oman).

8.4.1 Broader implications of this approach

The Workshop **recommends** that the IWC promotes and shares lessons from its successful model of expert training/capacity building for disentangling whales (see Item 5.1). This approach could be incorporated into existing marine debris initiatives including the Global Partnership on Marine Litter as well as at the national level. Such an approach could assist in developing technical expertise and activities related to:

(1) removal of ALDFG from marine areas where it accumulates (perhaps as a pilot study in an area where whales are most likely to encounter and become entangled such material);
(2) collection and proper disposal of old, damaged, or dysfunctional fishing gear so that it does not become ALDFG; and

[27] *http://www.iwc.int/conservation-management-plans*.

(3) marine debris outreach and awareness campaigns that target fisheries and other sectors from which debris originates to explain their impacts, the importance of reducing the amount of such debris, and actions that can be taken to prevent its impacts.

8.5 Funding streams

The Workshop recognises the funding implications of many of its recommendations. It **recommends** that the IWC, in concert with other IGOs, approach a range of organisations for financial and other support including financial institutions, public and private foundations, industry, businesses and NGOs.

8.6 Outreach

As noted under Item 8.1, an important component of the IWC contribution to existing marine debris initiatives relates to the provision of expert and technical advice with respect to cetacean-related issues. As part of this contribution, the Workshop noted the need to more widely disseminate the recommendations from the first IWC workshop on marine debris and those from the present workshop. The Workshop **recommends** that the IWC Secretariat examine ways in which it and its member nations can most effectively communicate these recommendations to the relevant target audience(s) including IGOs, appropriate government agencies and NGOs. In addition, the IWC should develop a dedicated section of its website to the issue of marine debris with the assistance of a small expert group. The IWC Secretariat should also consider highlighting the IWC's work on the impacts of marine debris on cetaceans at meetings of other IGOs, e.g. the forthcoming COFI in 2016.

The Workshop also **recommends** that the IWC develops improved methods to encourage its member nations and others to provide the marine debris and entanglement related data discussed in this report) and to provide progress reports on their general work on reducing marine debris as part of their national conservation reports.

In general, the Workshop noted that outreach materials on this topic should: (1) be developed in cooperation with all key stakeholders, including industry; (2) be tailored to specific target audiences; and (3) recognise the powerful impact of images and video of iconic species such as cetaceans, provided that they are used carefully and in the appropriate context.

9. ADOPTION OF REPORT

Mark Simmonds thanked all participants for their hard work over the preceding three days despite some significant distractions. He noted that this was probably the first IWC Workshop to be run in part in a nightclub and certainly the first to have coincided with the trajectories of two hurricanes. He thanked the Workshop Steering Committee for its advice and similarly his co-Convener David Mattila. He also expressed his gratitude to the rapporteur team (whose work was far from over), to Julie Creek of the IWC Secretariat (for her efficient administrative support to the meeting and its participants), and to Naomi MacIntosh (for effectively acting as the 'local anchor' and hotel liaison).

He noted that all the Workshop's recommendations had been agreed and approved during the course of the meeting and that the full report of the meeting would be drafted, circulated and approved by email in the days following. Finally, he wished everyone a safe journey home and closed the meeting at 18.32 on 7 August 2014.

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Annex A

List of Participants

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IWC Secretariat

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Annex B

Agenda

1. Introductory items
   - 1.1 Welcoming comments
   - 1.2 Appointment of Chairs and rapporteurs
   - 1.3 Objectives of the Workshop
   - 1.4 Adoption of Agenda
   - 1.5 Available documents and list of acronyms
   - 1.6 Review of previous IWC work
     - 1.6.1 Overview of the first IWC Workshop on marine debris and review of progress of recommendations
     - 1.6.2 Overview of previous IWC whale disentanglement workshops (Maui 2010; Provincetown 2011)
   - 1.7 Overview of relevant recent non-IWC meetings
     - 1.7.1 Overview of the 2012 'Untangled' global symposium hosted by WSPA (now WAP) in Miami
     - 1.7.2 Overview of UNEP, CMS, and CBD activities on marine debris
   - 1.8 Conclusions and recommendations
2. Overarching issues
   - 2.1 Clarifying marine debris terminology
   - 2.2 Improved data collection (including retention/identification of gear from cetaceans)
   - 2.3 Identifying hotspots of debris (geographically, temporally and within the water column)
     - 2.3.1 Technological data collection (e.g. use of Synthetic Aperture Radar, deep sea surveys)
     - 2.3.3 Modelling approaches (e.g. cetacean and debris (lost gear/other debris) co-occurrence; fishing effort modelling)
   - 2.4 What can be learnt from other species (e.g. risk analyses for seabirds and turtles by CSIRO)
   - 2.5 Future work on high risk areas and populations
3. Developing mitigation approaches
   - 3.1 Abandoned, lost and discarded fishing gear (ALDFG)
     - 3.1.1 Overview of existing legislation, agreements and strategies to tackle ALDFG by UN agencies
       - 3.1.1.1 Minimising the incidental capture of whales in commercial fisheries – an FAO perspective
       - 3.1.1.2 Monitoring and management of ALDFG by regional fisheries management organisations and other intergovernmental organisations
       - 3.1.1.3 IMO – MARPOL Annex V
       - 3.1.1.4 UNEP (Honolulu Strategy and GPML)
     - 3.1.2 National and regional plans for prevention and recovery of ALDFG
       - 3.1.2.1 Norway
       - 3.1.2.2 USA
       - 3.1.2.3 Hawaii Marine Debris Action Plan
       - 3.1.2.4 South Korea
       - 3.1.2.5 Western Europe (Healthy Seas)
       - 3.1.2.6 Philippines (Net-Works)
       - 3.1.2.7 Australia
       - 3.1.2.8 WAP Sea Change
     - 3.1.3 Facilitated panel discussion – strengths, weaknesses, opportunities and threats
     - 3.1.4 Data needs and recommended research actions to inform longer term management strategies for impacts of ALDFG on cetaceans
       - 3.1.4.1 Diagnosing active versus ALDFG fishing gear entanglement
       - 3.1.4.2 Identifying 'problem' fisheries with high rates of gear loss
       - 3.1.4.3 Assessing impacts of ALDFG at the individual and population level
       - 3.1.4.4 Identifying ALDFG cetacean entanglement hotspots
       - 3.1.4.5 Gear modifications (e.g. rope tensioning or weak-links) and new gear development
   - 3.2 Other marine litter: macrodebris and microdebris
     - 3.2.1 Overview of existing legislation and strategies to tackle marine litter (non-ALDFG)
       - 3.2.1.1 International laws and agreements (Basel Convention, UNGA regulations A/RES/60/30 and A/RES/63/111 on Oceans and the Law of the Sea – introduction to existing international instruments
       - 3.2.1.2 UNEP Regional Seas programmes and GPA
       - 3.2.1.3 UNEP Convention on Migratory Species (CMS) activities
       - 3.2.1.4 SPREP regional activities
       - 3.2.1.5 National and regional plans for prevention and recovery (including legislation and other initiatives) – efficacy, gaps and lessons learned
     - 3.2.2 Data needs and recommended research actions to inform longer term management strategies for addressing the impacts of marine litter on cetaceans
       - 3.2.2.1 Assessing impacts of ingestion (macro and micro) at the individual and population level – reporting of incidents to the IWC
     - 3.2.3 Immediate opportunities and recommendations for policy/management action by the IWC on 'other' [non-fishing derived] debris
4. The role of the IWC and other international bodies in addressing marine debris
5. Disentanglement
   - 5.1 Review of disentanglement training programmes and key needs/opportunities for growth
     - 5.1.1 The IWC programme
     - 5.1.2 NOAA
   - 5.2 Opportunities for marine debris entanglement reporting outreach (e.g. fishermen, shipping)
6. Information and outreach issues
   - 6.1 Public outreach, including a communications strategy for IWC
     - 6.1.1 Northwest Straits Foundation
     - 6.1.2 UNEP
     - 6.1.3 General outreach matters
7. Identifying priority research areas (from those identified above) and potential sources of funding

8. Conclusions and recommendations
8.1 Collaboration
8.1.1 IMO
8.1.2 SPREP
8.2 Data needs and research recommendations
8.2.1 Improved information on fishing gear including gear marking
8.2.2 Specialist workshop
8.2.3 Modelling
8.3 Consideration of the use of the IWC Conservation Management Plan approach
8.4 Global Cetacean Disentanglement Network
8.4.1 Broader implications of this approach
8.5 Funding streams
8.6 Outreach
9. Adoption of Report

Annex C

List of Acronyms

5IMDC	5th International Marine Debris Conference, Honolulu, 2011
ACAP	Agreement on the Conservation of Albatrosses and Petrels
ALDFG	Abandoned, Lost, or otherwise Discarded Fishing Gear
AMSA	Australian Maritime Safety Authority
ATSEA	Arafura Timor Seas Ecosystem Action programme
CAR-SPAW-RAC	Caribbean Specially Protected Areas and Wildlife Regional Activity Center
CBD	Convention on Biological Diversity
CMMs	Conservation and Management Measures
CMP	Conservation Management Plans
CMS	Convention on Migratory Species
COAFG	Commercial and other active fishing gears
COFI	Committee on Fisheries (FAO)
CPPS	Permanent Commission for the South Pacific
CSIRO	Commonwealth Science and Industrial Research Organisation
DFG	Discarded Fishing Gear
ECNC	European Centre for Nature Conservation
EEZ	Exclusive Economic Zone
EIA	Environmental Investigation Agency
FADs	Fish Aggregating Devices
FAO	Food and Agriculture Organization of the United Nations
FFA	Forum Fisheries Agency
FMP	[Indonesian] Fisheries Management Plan
GEF	Global Environment Facility
GGGI	Global Ghost Gear Initiative
GISIS	Global Integrated Shipping Information System
GNA	Ghost Nets Australia
GOM	Gulf of Maine
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
GPML	Global Programme on Marine Litter
GPWM	Global Partnership on Waste management
H-POWER	Honolulu Project Of Waste and Energy Recovery
IMO	International Maritime Organization
IUU	Illegal, Unreported and Unregulated fishing
IWC	International Whaling Commission
MARPOL	International Convention for the Prevention of Pollution from Ships
NOAA	National Oceanographic and Atmospheric
POV	Position-Of-View
PRF	Port waste Reception Facilities
RMFO	Regional Marine Fisheries Organisations
SAR	Synthetic Aperture Radar
SPREP	Secretariat of the Pacific Regional Environment Programme
UNEP	United Nations Environment Programme
UNEP-CEP-SPAW	United Nations Environment Programme Caribbean Environment Programme Specially Protected Areas and Wildlife
UNGA	United Nations General Assembly
WAP	World Animal Protection
WCGA	West Coast Governors' Alliance of Ocean Health
WCR	West Coast Regional Office
WGW	Western gray whales
WSPA	World Society for the Protection of Animals (now WAP)
WWF	World Wide Fund for Nature
ZSL	Zoological Society of London

Annex D

Documents Available to the Workshop

Anon. 2014. The Declaration of the Global Plastics Association for Solutions on Marine Litter. Progress Report, 2014. 29pp.

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STAP. 2011. *Marine Debris as a Global Environmental Problem: Introducing a Solutions Based Framework Focused on Plastic*. STAP Information Document, Global Environmental Facility, Washington, DC. 40pp.

Trusts, P.C. 2014. Large scale tracking of fish aggregating devices: a partnership to improve management of the world's largest tuna fishery. 2pp.

World Animal Protection. 2014a. Fishing's phantom menace - how ghost fishing gear is endangering our sea life. 33pp.

World Animal Protection. 2014b. Fishing's phantom menace - how ghost fishing gear is endangering our sea life - Executive Summary. 2pp.

World Animal Protection. 2014c. The Global Ghost Gear Initiative. Creating a sea change: towards ghost-gear-free seas. 2pp.

World Society for the Protection of Animals. 2013. *Proceedings of the Untangled symposium: Exploring the impact of marine debris on animal welfare and seeking animal-focused solutions*. WSPA, London. 64pp.

Report of the International Whaling Commission Standing Working Group on Conservation Management Plans

26 May 2013, Brisbane, Australia

Report of the International Whaling Commission Standing Working Group Meeting on Conservation Management Plans[1]

Sunday 26 May 2013
Brisbane Convention and Exhibition Centre, Brisbane, Australia

1. INTRODUCTIONS

1.1 Welcome/opening comments

The Working Group Chair, Petrachenko, welcomed participants to the meeting, and in particular, the representative from the Secretariat of the Pacific Regional Environment Programme (SPREP) who attended their first meeting of this Working Group as observers. An apology had been received from the South African Commissioner, Mr Oosthuizen, who was unable to attend the meeting. The list of participants is provided at Annex A.

The Chair noted that Conservation Management Plans (CMPs) were introduced into the IWC in 2008 as an adaptive, flexible, tailored management tool that can be applied to improve conservation outcomes for the most at-risk cetacean populations by targeted management of human activities, when there is a reasonable expectation that they can deliver real conservation gains.

The Chair highlighted the recommendations that were agreed by the IWC at its 2012 meeting, one of which was the elevation of the then IWC Small Advisory Group on CMPs into the present Standing Working Group (SWG). The Chair noted that the Group's reformation is an endorsement of the work the Group has done to date and broader support for CMPs as an important conservation management tool to manage threatened whale populations and to achieve conservation objectives.

1.2 Minister's address

A video address was given by the Australian Minister for Sustainability, Environment, Water, Population and Communities, the Hon Tony Burke MP[2].

1.3 Adoption of Agenda

The Chair suggested that a new Agenda Item, 'Funding Arrangements for CMPs', be added to the Agenda. The proposed amendment to the Agenda was agreed and the agenda subsequently adopted. The adopted Agenda is provided at Annex B. A list of acronyms is provided at Annex C.

1.4 Appointment of rapporteurs

Evans, Onken and Skinner were appointed as rapporterus.

2. FUNDING ARRANGEMENTS FOR CMP

The IWC Executive Secretary (Brockington), provided information on CMP related funding for the past three years. The fund was established in 2009 with a voluntary contribution from Australia of GBP £244,505. There has been minimal expenditure from this account to date. As at 31 August 2012, a total of GBP £5,386 has been spent on activities related to Conservation Management Plans. The closing balance of the account at 31 August 2012 (including interest earned) is GBP £239,362[3].

The Secretary outlined the expected expenditure for the Commission's current financial year (ending August 2013). The Commission had agreed at its 64th meeting in 2012 to provide up to GBP £50,000 to the South West Atlantic Southern Right Whale CMP and GBP £25,000 to the Western Gray Whale CMP. The projected closing balance of the account at August 2013 is approximately GBP £161,000.

Meeting discussions and actions arising

The Chair noted that the CMP fund was established to assist with the development and implementation of CMPs. This includes funding for prospective CMP proponents to undertake research to assess where management gaps exist, and supporting SWG-CMP members to attend its meetings. It would be useful to review the guidelines on the use of the fund so that it better supports the work related to CMPs, which now looks at management planning more broadly.

The Chair **requested** that the following item be added to the agenda for the next SWG-CMP meeting:

- Review guidelines on the use of the CMP fund to better support the work of the SWG-CMP.

3. CMP IMPLEMENTATION: WESTERN PACIFIC GRAY WHALE CMP PROGRESS REPORT

Russia, Ilyashenko, provided a presentation on the progress of implementing the Western Pacific Gray Whale CMP, which was approved by the International Union for Conservation of Nature (IUCN) and endorsed by the IWC in 2010. The overall goal of the CMP is to manage human activities that affect western gray whales and maximise the population's chances for recovery, based on the best available scientific knowledge. Implementation of the CMP is being directed by the Western Gray Whale Advisory Panel, working with key range state governments, civil society, industry, the IUCN and the IWC to provide scientific advice and recommendations to Sakhalin Energy on their operational plans and the mitigation measures.

The presentation included an overview of recent satellite tagging programmes undertaken near Sakhalin Island by a team of international researchers, including the migration routes of three gray whales from the western population, Flex, Agent and Varvara, that were tagged during the study and which travelled within the migration routes of the eastern population. One of the tagged whales was found to visit all of the major Mexican eastern gray whale breeding grounds, which might indicate a possibility for genetic mixing between the two populations. Further satellite tagging and genetic research is required.

Investigations have also revealed the appearance of new adult whales and the re-emergence of adult individuals that had been absent for five to seven years – with some individuals from the Sakhalin region appearing in photo-catalogues in the United States (US).

Together these results highlighted that the eastern and western populations may not be isolated and that the possibility of genetic exchange was significant.

A draft of Memorandum of Understanding concerning Conservation Measures for the Western Gray Whale

[1]Presented to the Conservation Committee as IWC/65/CCRep03.
[2]This was available for viewing at: *https://docs.google.com/file/d/0B2TTcb03zOr4aHUtWlp6NTBjVDg/edit?usp=sharing.*
[3]*Ann. Rep. Int. Whal. Comm.* 2012: 173 [2013].

Population (MoU) has been developed with Canada, Mexico, Japan, China, Republic of Korea, Russia, the US and participating organisations including the Western Gray Whale Advisory Panel of IUCN, the Secretariat of the IWC, the Secretariat of the Convention on Migratory Species, and oil and gas companies. The following actions will also be undertaken as part of the CMP:

- development of national conservation action plans;
- designation of a national coordinator from the competent authority and a scientific coordinator to serve as contact points;
- implementation of international coordination by a designated coordinator or the Western Gray Whale Advisory Panel of the IUCN; and
- discussion of national reports and future activities during IWC sessions or other relevant international meetings.

Meeting discussions and actions arising

At the request of the USA, Russia provided additional information on satellite tagging data. The USA reaffirmed its support for the MoU and the CMP as one of the range states of the population.

Mexico sought clarification on the genetic difference between the eastern and western populations. Russia advised that researchers have undertaken studies into the genetic differences between the two populations and it is likely that each population consists of tribes with each tribe displaying little genetic difference.

4. CMP IMPLEMENTATION: SOUTHWEST ATLANTIC SOUTHERN RIGHT WHALE CMP PROGRESS REPORT

Argentina (Iñíguez) provided a presentation on the outcomes of the Southwest Atlantic Southern Right Whale CMP meeting that was held in Buenos Aires on 23-24 April 2013.

The overall objective of the CMP is to protect the southern right whale habitat and minimise anthropogenic threats to maximise the likelihood that southern right whales will recover to healthy levels and recolonise their historical range.

The objectives of the meeting were to revise the CMP to keep it dynamic and current; appoint a coordinator for the CMP; finalise the Steering Committee; and consider the need for range state sub-coordinators. Argentina (Iñíguez) was appointed coordinator for 18 months, commencing 1 May 2013 (a part time position funded through the IWC Voluntary Fund for CMPs), and Argentina nominated a sub-coordinator.

A Steering Committee was established with the following membership: Argentina, Brazil, Uruguay, Chile and representatives from the IWC (Head of Science, IWC Chair, SWG-CMP Chair, Scientific Committee Chair and Conservation Committee Chair).

The plan was revised, with actions tightened and refined, timelines in general extended, and clear linkages established with other IWC-related processes and groups.

Deliverables since adoption of the plan have been in two main areas: capacity building to better manage strandings (Brazil and Argentina), and mitigation actions to address southern right whale-kelp gull interactions at Peninsula Valdez (Chubut, Argentina).

Research related to the CMP will be undertaken using the *Dr Bernardo Houssay*, an oceanographic motor vessel offered by the Argentinean Coast Guard. The research voyage, which is expected to last approximately 30 days, will explore two of the three feeding grounds of southern right whales. The vessel has capacity for eight scientists and two coast guard personnel. International experts are expected to be invited to join the voyage. Planning is underway for the departure of the first voyage.

While progress on CMP implementation has been limited, engagement by participants was good, and momentum is expected to increase with the appointment of a funded coordinator.

Meeting discussions and actions arising

The UK asked if the research undertaken on the *Dr Bernardo Houssay* will be included in the Southern Right Whale Sensitivity Atlas that is being developed under CMP action RES-02. Argentina confirmed that the Atlas will continue to be updated and will include all the threats to southern right whales.

At the request of Australia, Argentina provided background information on the kelp-gull attacks. Argentina also confirmed for Australia that one of the southern right whale feeding areas was in fact north of the breeding areas and the other was south of the breeding areas, based on historical whaling maps.

5. CMP IMPLEMENTATION: SOUTHEAST PACIFIC SOUTHERN RIGHT WHALE PROGRESS REPORT

Chile (Hermosilla-Silva) tabled a presentation on implementation of the Southeast Pacific Southern Right Whale CMP, which had been endorsed at IWC/64.

The southeast population of Pacific right whales is critically endangered and is estimated to include less than 50 mature individuals. The objective of the CMP is to guide and encourage range states and national stakeholders (including government, industry, coastal communities and civil society) and international partners to take steps towards the recovery of this population that will allow the species to withstand both environmental and anthropogenic impacts and ensure its long term survival.

A Steering Committee coordinator (Chile) and national working groups have been established to progress implementation of the CMP. A national working group coordination meeting was held in December 2012, with a further meeting expected in June 2013. A regional coordination meeting will also be held in September 2013.

Scientific research has been conducted under the CMP and has involved non-government organisations and the Chilean Navy. A recent publication in *Marine Mammal Science* revealed the first resighting of a known individual; the southernmost sighting of a cow-calf pair; and the first documented record of likely reproductive behaviour in the southern right whale population.

Conservation advances include the enforcement of whale watching regulations that only allow land-based whale watching of Southeast Pacific southern right whales in Chile (from 2012 onwards) and a process commenced by the Chilean Navy to develop and implement a contingency plan to afford maximum protection to southern right whales when a sighting is recorded.

Chile advised that a full progress report would be presented to the IWC Scientific Committee meeting in Jeju, Republic of Korea in June 2013.

Meeting discussions and actions arising
The SWG-CMP Chair was **requested** to contact the new Commissioner for Peru to provide a summary of the SWG-CMP meeting.

6. CMP PLANNING AND DEVELOPMENT: THE ARABIAN SEA HUMPBACK POPULATION

The Chair provided an update on the Arabian Sea humpback population provided to her by Dr Rob Baldwin, who was unable to attend the meeting.

The Arabian Sea humpback population had previously been identified by the Scientific Committee as a likely candidate for a CMP. To facilitate this process an Intersessional Working Group was formed at IWC/63. Good progress has been made towards assembling the necessary documentation should range states decide to submit a CMP nomination.

WWF International, through its Pakistan and United Arab Emirates offices, is launching a regional marine conservation initiative, which includes a special focus on the Arabian Sea humpbacks. The strategy is to raise awareness and appreciation of the issue by the governments of Oman and India (as the IWC members in the region).

Research on Arabian Sea humpbacks has continued in Oman and an update on progress will be presented to the Scientific Committee in Korea in June 2013.

Earlier this year, a three day training workshop was held for Omani Government personnel on strandings. Throughout the year researchers in Oman under the auspices of the Environment Society of Oman (ESO) have progressed work related to whale watching concerns and have been in discussion with Port of Duqm (a major new port in an identified humpback habitat) regarding whales in the area. This has resulted in the Port authorities publishing a special note to mariners on Admiralty charts about the conservation value of the area to whales and locating and aligning anchorage and approach channels according to ESO advice. ESO is continuing to work with Port of Duqm to promote further mitigation (e.g. vessel speed limits).

Meeting discussions and actions arising
The Chair encouraged participants to raise the Arabian Sea Humpback CMP during any future discussions that may occur with Oman, Pakistan and India, and offer support for its development.

The Chair was **requested** to write to Oman (and India) to convey the outcomes of the SWG-CMP meeting and request that an update on the progress of the CMP development be provided at the next meeting of the SWG-CMP.

7. CMP PLANNING AND DEVELOPMENT: NORTH SEA PLAN FOR HARBOUR PORPOISES

The UK (Gray), provided a presentation on the Conservation Plan for harbour porpoises in the North Sea, which was adopted at the sixth meeting of the parties to ASCOBANS.

The Conservation Plan aims to achieve and maintain a favourable conservation status, specifically by agreeing a series of priority actions that would work to ensure that: population dynamics data suggest that harbour porpoises are maintaining themselves at a level enabling their long-term survival as a viable component of the marine ecosystem; the range of harbour porpoises is neither reduced, nor is it likely to be reduced in the foreseeable future; habitat is of favourable quality and will be available to maintain harbour porpoises on a long term basis; and distribution and abundance of harbour porpoises in the North Sea are returned to historic coverage and levels, wherever biologically feasible.

The UK highlighted the current threats faced by the harbour porpoise and the efforts being undertaken to improve its conservation status.

The UK further highlighted the effectiveness of engaging a full-time coordinator. The coordinator is supported by a Steering Group and has been tasked with coordinating the implementation of the Plan (including investigating funding); gathering information on its implementation, the results, the objectives reached, and the difficulties encountered and providing progress reports; and appointing a group of experts to evaluate effectiveness and update the Plan every three years.

Meeting discussions and actions arising
The USA noted that the presentation highlighted bycatch and infectious diseases as the largest contributors to the mortality rate of harbour porpoises and asked if there had been any trends (increases or decreases) in the mortality rate, or if they had remained stable. The UK advised that bycatch had remained fairly constant while there had been a decline in the level of contaminants found in harbour porpoises due to a reduction in some pollutants in the marine environment.

The IWC Executive Secretary noted that the harbour porpoise population was approximately 300,000 when the Plan was adopted, and asked whether there was any resistance from stakeholders in implementing the plan. The UK advised that while there was little resistance in implementing most of the priority actions, there were some concerns about additional reporting requirements.

Mexico sought clarification on whether the mandatory use of pingers was the only bycatch mitigation measure being used and whether the North Sea harbour porpoises are the same as the population found around Norway. The UK advised that the use of pingers is the primary mitigation measure set out in the plan, but gear modification has also been investigated. It was also that noted observer programmes are in place for some vessels to help monitor trends and that electronic monitoring systems have also been considered for the collection of data. The fishing industry is generally happy to cooperate with bycatch mitigation measures as it is in their best interest for porpoises not to end up in their fishing nets. With regard to Norway, the UK continues to encourage Norway to join ASCOBANS and the Harbour Porpoise Plan.

8. CMP PLANNING AND DEVELOPMENT: WORKING WITH OTHER IGOS, NGOS AND OTHERS TO DEVELOP AND DELIVER CMPS

CMPs, by their very nature, are collaborative initiatives and there can be value in working through intergovernmental organisations (IGOs) to draw on their networks and expertise, and to ensure the plans are consistent with related international agreements and commitments.

The IWC Secretary outlined the various cross-cutting issues related to CMPs and highlighted that collaboration with IGOs, nongovernment organisations (NGOs) and others is central to the successful implementation of CMPs.

The IWC has contact with a number of interested parties that can be grouped as follows: fisheries organisations (FAO, CCAMLR), multilateral environmental agreements (CMS, CBD, CITES, UNEP), regional seas agreements (SPREP, CEP), international conventions (MARPOL, Basel Convention), industry representatives, NGOs and research organisations.

With regard to its interactions more broadly, Brockington observed that the IWC has an extensive scientific base

and broad global membership, but needs to improve its interactions with interested parties and other conventions. To date, the IWC has played a relatively passive, listen and reporting role with interested parties. The IWC could take a more proactive approach to engaging with interested parties, including inviting IGOs to make presentations at Commission meetings.

The IWC could also use its observer arrangements with other organisations to greater facilitate the sharing of data and information, i.e. to address current gaps in knowledge. For instance, the IMO could be approached to provide data on cetacean ship strikes.

Meeting discussions and actions arising

Participants agreed that it would be useful for the Secretariat to advise of the IGOs on which the IWC has observer status and the details of each such arrangement. It would also be useful to identify relevant knowledge gaps. Requests for information can then be made to the appropriate organisations.

The meeting agreed that knowledge gaps should be clearly identified in each CMP along with the appropriate organisations that could provide relevant information.

Given that CMPs address a range of issues related to cetaceans, it is important to link thematic programs with CMPs and also with other IGOs.

Many other organisations still view the IWC as an organisation that solely regulates commercial whaling, rather than an organisation that is actively promoting and pursuing conservation objectives. To address this, the IWC's communication strategy should promote the conservation work being done by the IWC. It was also noted that under the UNCLOS, there is an obligation to cooperate with the IWC.

The SWG-CMP **agreed** to develop a list of recommendations to be provided to the IWC's Communications Officer for the development of media to promote CMPs and the IWC's conservation work more broadly.

9. CMP IMPLEMENTATION AND DEVELOPMENT: DEVELOPING A LIST OF PRIORITY SPECIES FOR CMPS

At IWC/63, the report of the then Small Advisory Group on CMPs recommended that the Scientific Committee undertake an analysis of priority candidates for future CMPs. The report highlighted that such a list would be useful in informing discussions within the Commission, including on matters relating to CMP funding support. At IWC/64, the Commission agreed to this recommendation.

The IWC Head of Science confirmed that the Commission's request for the Scientific Committee to compile a list of priority species/populations for future CMPs will be actioned at the forthcoming Scientific Committee meeting in Korea in June 2013. The IWC Head of Science further highlighted that CMPs can be developed to address threats and critical habitats, as well as populations.

Meeting discussions and actions arising

Australia noted that CMPs are addressed by various sub-committees of the Scientific Committee. In addition, much of the work undertaken by those sub-committees is directly applicable to CMPs, but may not be easily conveyed to those countries that do not have a Scientific Committee representative.

The SWG-CMP **should consider** how CMPs can be addressed by the Scientific Committee, and how Scientific Committee information related to CMPs can be provided to proponents who submit a proposal to the Conservation Committee.

The SWG-CMP **agreed** to then develop a list of priority cetacean populations to be recommended to the Conservation Committee for endorsement, based on the results of the Scientific Committee's analysis.

The SWG-CMP **should explore** the development of CMPs to address threats and critical habitats.

10. STRATEGIC REVIEW: REGIONAL CETACEAN CONSERVATION MEASURE REVIEWS

10.1 2012 IWC Pacific Islands Region report – next steps

At IWC/64, Australia submitted a report on 'Cetacean Conservation Measures in the Pacific Islands Region, with a focus on Oceania Humpback Whales'. The report provided a preliminary inventory of the cetacean conservation measures currently in place in the Pacific Islands region. It is at the regional level that the IWC would be best placed to assist countries, should they desire, to build upon these cetacean conservation efforts, through the development of a CMP.

SPREP thanked the SWG-CMP for the report and agreed to circulate it to SPREP members for discussion at the next SPREP meeting in September 2013. SPREP also advised that a number of new measures have been implemented since the completion of the report and it will therefore need to be updated. SPREP also agreed to provide advice to the SWG-CMP on the usefulness of the inventory, how frequently it should be updated and possible indicators that could be included in the inventory.

Meeting discussions and actions arising

Australia suggested that the next step of the inventory would be to include species-specific conservation measures already in place across the region. In addition, the inventory could include information on NGOs/IGOs in the region that have an interest in cetacean conservation.

Australia **agreed** to provide the inventory to SPREP and to work with SPREP during the intersessional period to update the inventory with new measures that have been agreed since its completion: species-specific conservation measures in place across the region and a list of IGOs/NGOs in the region that have an interest in cetacean conservation. The revised inventory should be reported to the next meeting of the SWG-CMP.

SPREP is **requested** to provide advice to the next meeting of the SWG-CMP on the usefulness of the inventory; how frequently it should be updated and possible indicators that could be included.

It was **agreed** that Australia should work with SPREP and other IWC Pacific nations to request the IWC Scientific Committee to review the Oceania Humpback Recovery Plan from a CMP perspective and make an assessment of whether there are gaps in the Plan that can be addressed by the IWC.

The meeting **agreed** that it would be useful for SPREP to submit progress reports on the implementation of the Recovery Plan to the SWG-CMP.

SPREP raised the issue of Solomon Islands dolphin hunts and asked if this had been raised in the IWC. The IWC Head of Science advised that a study on the population had been funded through the IWC's small cetaceans fund. The SWG-CMP **agreed** to provide details of the study to SPREP.

10.2 Regional prioritisation – future actions

The preliminary inventory of cetacean conservation measures submitted to the IWC in 2012 has enabled the Commission and IWC member countries to identify cetacean conservation management gaps, and opportunities for

addressing these, through a collaborative regional approach. The meeting considered other regional candidates where similar inventories could be compiled, using the Pacific inventory as a model.

Meeting discussions and actions arising
Participants discussed the importance of identifying initiatives being undertaken by regional organisations and building on existing work. In some regions there are a number of overlapping organisations in place, while in other regions no regional organisations exist. There is a need to identify priority populations, the organisations currently in place in the region and the actions those organisations are undertaking to manage the species.

The SWG-CMP **agreed** that the Indian Ocean and the Arctic are good candidates for the development of a regional inventory and **agreed** that it should develop a work plan to progress this matter for agreement by the Conservation Committee.

11. STRATEGIC REVIEW: REVIEWING THE PROCESS AND GUIDELINES FOR DEVELOPING AND IMPLEMENTING CMPS

CMPs are a key component of the IWC's work programme bringing together, as it does, science and conservation management to deliver concrete practical actions.

CMPs can be initiated by range states or by the Commission. Participants discussed whether there is a need for a more systematic approach to initiating CMPs. CMPs initiated by range states generally deal with the most urgent conservation needs, while an IWC-based systematic approach will enable the Commission to better manage the longer term conservation of cetaceans.

Global Partnership for Oceans
Russia provided a brief outline of the work of the Global Partnership for Oceans (GPO), which aims to 'increase the resources available to tackle widely documented problems contributing to the depletion of crucial ocean resources and degradation of the ocean environment'. The GPO has the following interrelated objectives: supporting sustainable seafood and aquaculture; conserving critical habitats and biodiversity; and reducing pollution to promote job and food security worldwide. The GPO will provide funds to support the implementation of action plans and policies related to its objectives. Further information on the GPO can be found at the GPO website[4] or in the GPO fact sheet[5].

The SWG-CMP **agreed** that the Chair would request the IWC Intersessional Group on Conservation Funding to review the GPOs guidelines for submitting funding proposals and, if appropriate, draft a proposal seeking funding for work related to marine debris. Depending on the GPO's document submission timeline, the draft proposal should be submitted to IWC/65 for endorsement.

Conservation Committee guidance on CMPs
Currently, any request from the SWG-CMP to the Scientific Committee, must first be agreed by the Commission. As the Commission now meets biennially, it was agreed that the SWG-CMP will need to develop a more flexible mechanism for obtaining guidance on its work intersessionally. The SWG-CMP **recommended** that this issue be raised at the September meeting of the Bureau, **noting** its applicability to all intersessional working groups.

Other meeting discussions and actions arising
The SWG-CMP **agreed** to develop a 10-year framework for CMPs to guide the work of the SWG-CMP. The framework will include *inter alia*: (i) the timing of CMP progress updates; (ii) a list of priority species for which CMPs should be developed and the timeframe for their development; a list of IGOs/NGOs that have an interest in CMPs and the proposed engagement with each; (iii) the timing of reviews of guidelines and templates; and (iv) timing of the provision of CMP status reports to the Conservation Committee. The terms of reference of the SWG-CMP should also be revised to reflect Group's broader working agenda.

The SWG-CMP also **agreed** to meet face-to-face in the first half of 2014 to finalise the priority species list and 10 year framework.

12. OTHER MATTERS

12.1 Actions arising
A table summarising the proposed actions arising from the meeting is provided in Annex D.

12.2 Adoption of the Report
A draft report of the meeting will be circulated to SWG-CMP members for comment. The final report will be submitted to the IWC Conservation Committee.

12.3 Next meeting
The next meeting of the SWG-CMP will be held in the first half of 2014. A call was made to SWG-CMP members to host the next meeting. Mexico advised that it would explore potential venues and the possibility of hosting the meeting in conjunction with a number of other IWC conservation workshops.

CMP proponents are **requested** to report to the next meeting of the SWG-CMP on progress since IWC/64 on the development/implementation of each CMP. Reports should include progress made against the overall objective and each action identified under the CMP, as well as the nature of any expenditure of monies received through the CMP fund. Updates will be incorporated into the SWG-CMP's report to the meetings of the IWC Conservation Committee and Commission at IWC/65.

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[4] *http://www.globalpartnershipforoceans.org.*
[5] *http://www.globalpartnershipforoceans.org/sites/default/files/images/GPO%20Q%26A %204.25.pdf.*

Annex A

List of Participants

ARGENTINA
Miguel Iñíguez

AUSTRALIA
Donna Petrachenko (Chair)
Chris Schweizer
Peter Komidar
Mike Double
Michelle Evans (Rapporteur)
Rebecca Onken (Rapporteur)
Tristan Skinner (Rapporteur)

CHILE
Kathy Hermosilla-Silva

COSTA RICA
Gerardo Palacios

FIJI
Saras Sharma-Gounder

MEXICO
Lorenzo Rojas-Bracho

RUSSIAN FEDERATION
Valentin Ilyashenko

UK
James Gray

USA
Ryan Wulff
Melissa Andersen

IWC SECRETARIAT
Simon Brockington (Executive Secretary)
Greg Donovan (Head of Science)

SPREP
Penina Solomona

Annex B

Agenda

Introductions
1. Welcome/opening comments adoption of Agenda
2. CMP funding arrangements

CMP implementation
3. Presentation: West Pacific Gray Whale CMP - progress report [Russia]
4. Presentation: Southwest Atlantic Southern Right Whale CMP - progress report [Argentina]
5. Presentation: Southeast Pacific Southern Right Whale CMP - progress report [Chile]

CMP planning and development
6. Arabian Sea humpback population
7. Presentation: North Sea Plan for harbour porpoises [UK]
8. Working with non-member range states IGOs, NGOs and others to develop and deliver CMPs
9. Developing a list of priority species for CMPs

Strategic review
10. Regional cetacean conservation measure reviews: (a) 2012 IWC Pacific Islands region report – next steps; (b) regional prioritisation – future actions
11. Reviewing the process and guidelines for developing and implementing CMPs
12. Actions arising; intersessional report to the Conservation Committee and the IWC Bureau next meeting

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Annex C

List of Acronyms

ASCOBANS:	Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas
Basel Convention:	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
CCAMLR:	Commission for the Conservation of Antarctic Marine Living Resources
CBD:	Convention on Biological Diversity
CEP:	Caribbean Environment Programme
CITES:	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species of Wild Animals
FAO:	Food and Agriculture Organization of the United Nations
GPO:	The Global Partnership for Oceans
IGO:	Intergovernmental Organisation
IMO:	International Maritime Organization
IUCN:	International Union for the Conservation of Nature
IWC:	International Whaling Commission
MARPOL:	International Convention for the Prevention of Pollution
NGO:	Non-government Organisation
SPREP:	Secretariat of the Pacific Regional Environment Programme
SWG-CMP:	Standing Working Group on Conservation Management Plans
WWF:	World Wide Fund for Nature
UNEP:	United Nations Environment Programme

Annex D

Summary of Actions

Action no.	Agenda item	Agenda item description	Action	Assignee	Timeframe for completion
1	2	Funding for CMPs	Add 'Funding Arrangements for CMPs' as an agenda item for the next SWG-CMP meeting.	Chair/host of next SWG-CMP meeting	First half of 2014
2	2	Funding for CMPs	Review the guidelines on the use of the CMP fund to better support the work of the SWG-CMP.	Chair to coordinate	First half of 2014
3	5	Southeast Pacific southern right whale CMP progress report	SWG-CMP Chair to contact the new Commissioner for Peru to provide a summary of the SWG-CMP meeting.	Chair	Immediately
4	6	Arabian Sea Humpback CMP	The Chair was requested to write to Oman (and India) to convey the outcomes of the SWG-CMP meeting and request that an update on the progress of the CMP development be provided at the next meeting of the SWG-CMP.	Chair	Immediately
5	8	Working with other IGOs, NGOs and others to develop and deliver CMPs	Develop a list of recommendations to be provided to the IWC Communications Officer for the development of media to promote CMPs and the IWC's conservation work more broadly.	Chair to lead	Draft: first half of 2014 Final: September 2014
6	9	Developing a list of priority species for CMPs	Consider how CMPs can be addressed by the Scientific Committee, and how Scientific Committee information related to CMPs can be provided to proponents and submit a proposal to the Committee.	Chair/Australia	Draft: first half of 2014 Final: Sep. 2014
7	9	Developing a list of priority species for CMPs	On the completion of the list of priority species, request the Scientific Committee to undertake further analysis on priority candidates of small cetacean species that would benefit from the implementation of a CMP.	Chair	IWC/65
8	9	Developing a list of priority species for CMPs	Develop a list of priority cetacean populations to be recommended to the Conservation Committee for endorsement, based on the results of the Scientific Committee's analysis.	Chair to coordinate	IWC/65
9	9	Developing a list of priority species for CMPs	Explore CMP issues related to habitat protection.	Chair/Head of Science to coordinate?	First half of 2014
10	10.1	2012 IWC Pacific Islands Region Report	Provide the inventory of cetacean conservation measures in the Pacific Region to SPREP. Update and refine the inventory and report to the next SWG-CMP meeting, including advice on the inventory's usefulness.	Australia SPREP/Australia	Immediately following SWG-CMP meeting First half of 2014
11	10.1	2012 IWC Pacific Islands Region Report	Request the IWC Scientific Committee to review the Oceania Humpback Recovery Plan to assess whether there are gaps that can be addressed by the IWC.	SPREP/ Australia	September 2014
12	10.1	2012 IWC Pacific Islands Region Report	Submit progress reports on the implementation of the Oceania Humpback Recovery Plan to the SWG-CMP.	SPREP	September 2014
13	10.1	2012 IWC Pacific Islands Region Report	Provide the small Solomon Islands dolphin research report to SPREP.	Chair	Immediately
14	10.2	Regional prioritisation	Develop a work plan for agreement by the Conservation Committee to progress the development of regional inventories, including the Arctic and Indian Ocean.	Chair to coordinate	Draft: first half of 2014 Final: September 2014
15	11	Reviewing the process and guidelines for developing and implementing CMPs	Request the IWC Intersessional Group of Conservation Funding to review the GPOs guidelines for submitting funding proposals, and if appropriate, draft a proposal seeking funding for work related to marine debris. Depending on the GPO's document submission timeline, the draft proposal should be submitted to IWC/65 for endorsement.	Chair to make request to ICG on Conservation funding	September 2014, depending on GPO timelines
16	11	Reviewing the process and guidelines for developing and implementing CMPs	Raise the issue of developing a mechanism for obtaining guidance on work intersessionally at the September meeting of the Bureau - noting its applicability to all intersessional working groups.	Chair and other Bureau members	Bureau meeting, September 2013
17	11	Reviewing the process and guidelines for developing and implementing CMPs	Develop a 10 year framework for CMPs to guide the work of the SWG-CMP. Review the terms of reference of SWG-CMP to reflect Group's broader working agenda.	Chair to coordinate	Draft: first half of 2014 Final: September 2014
18	11	Reviewing the process and guidelines for developing and implementing CMPs	Meet face-to-face in the first half of 2014 to finalise the priority species list and five-10 year framework.	-	First half of 2014
19	12	Actions arising	Circulate a draft report of the meeting to SWG-CMP members for comment. The final report will be submitted to the Conservation Committee.	Chair to coordinate	Following SWG-CMP meeting; IWC/65
20	12	Actions arising	The next meeting of the SWG-CMP will be held in the first half of 2014.	-	-
21	12	Actions arising	Report to the next meeting of the SWG-CMP on the progress since IWC/64 of development/implementation of each CMP.	CMP proponents	Next SWG-CMP meeting

Report of the Standing Working Group on Conservation Management Plans: Progress on the Development and Implementation of CMPs

10 September 2014, Portorož, Slovenia

Report of the Standing Working Group on Conservation Management Plans: Progress on the Development and Implementation of CMPs[1]

Wednesday 10 September 2014
Grand Hotel Bernadin, Portorož, Slovenia

RECOMMENDATIONS

It is recommended that the Conservation Committee note progress on the development and implementation of CMPs during the intersessional period, as reported here, and endorse the following recommendations for consideration by the Commission.

(1) That the Commission **endorse** the revised Terms of Reference for the Standing Working Group on Conservation Management Plans (see Annex A).
(2) That the Commission **endors**e the draft Conservation Management Plans Work Plan 2014-2020 at Annex B.
(3) That the Scientific and Conservation Committees **endorse** the CMP-related recommendation from the two IWC Workshops on marine debris and cetaceans (in 2013 and 2014) that the issue of marine debris is incorporated and addressed in existing (and future) CMPs.
(4) That the Conservation Committee further **discuss**, and consider referring to the Scientific Committee for discussion, the concept of a threat based marine debris CMP.
(5) That all CMPs include an assessment of impacts of marine debris.
(6) That the Conservation Committee and Scientific Committee be **urged** to undertake further analysis on priority candidates of cetaceans, including small cetaceans, that would benefit from the implementation of a CMP, as a matter of high priority.
(7) That the Conservation Committee **recommend** that the Scientific Committee discuss the issue of carrying capacity for South West Atlantic Right Whales as a matter of priority; and that the scientists associated with the recent research be included as invited participants to the SC/66a meeting in May 2015.
(8) That the Working Group **collaborate** with relevant Contracting Governments to develop an inventory of cetacean conservation measures in place in the Indian Ocean.
(9) That the Scientific Committee be **invited** to review the Oceania Humpback Recovery Plan from a CMP perspective and make an assessment of whether there are gaps in the Plan that can be addressed by the Commission.
(10) That the Working Group on Conservation Financing should **add to their work programme** the consideration of the provision of dedicated funds to be made available for CMP related work.
(11) Countries receiving funding for CMPs should provide an estimate of funds required to further work relating to CMPs to aid in the budgeting process for the next four years.
(12) That the Conservation Committee should **highlight** to the Scientific Committee (though the Commission) that research actions detailed in endorsed CMPs should be made a priority.
(13) That the SWG-CMP **meet** during the intersessional period and report back to the Conservation Committee at IWC/66.

OVERVIEW

Conservation Management Plans (CMPs) are an important conservation initiative of the International Whaling Commission (IWC) that aim to recover critically endangered whale populations and other cetaceans. Conservation Management Plans (CMPs) were introduced into the IWC in 2008 to provide the Commission with an adaptive, flexible, tailored management tool that can be applied to improve conservation outcomes for the most at-risk cetacean populations through the targeted management of human activities.

At its meeting in 2009, the Commission established the Small Advisory Group on CMPs within the Conservation Committee to provide advice and guidance to the Commission and proponents on CMP related issues, including the nomination, development, implementation, monitoring and review of CMPs. This group was reconstituted as the Standing Working Group on CMPs (SWG-CMP) in 2012 recognising the important role it had played in supporting and guiding the CMP initiative in the Conservation Committee, and the benefits it would provide to CMP nominations received by the Commission and implemented by range states.

The Terms of Reference for the SWG-CMP (see Annex A for endorsement)**,** have been updated to reflect current working arrangements of the Commission and the SWG-CMP.

The SWG-CMP includes membership (as at September 2014) from IWC Contracting Governments (Australia, Argentina, Ghana, Italy, Mexico, Russia, South Africa, the UK and the USA); observers (Spain, the United Nations Environment Programme (UNEP) the Secretariat of the Pacific Regional Environment Programme (SPREP)); and representatives from the IWC Scientific and Conservation Committees. It is recommended that membership be extended to all range states of species with CMPs. The Scientific Committee facilitates closer links between the two committees on CMPs and ensures that policy/management advice is underpinned by the best available science. The Conservation Committee provides management and policy advice and reports to the Commission on CMP implementation and development progress based on advice received from the SWG-CMP and CMP proponents. The SWG-CMP warmly welcomes any new members or interested parties.

At its July 2012 meeting (IWC/64), the Commission endorsed all of the SWG-CMP's recommendations concerning the development of CMPs. This included the

[1]Presented to the Conservation Committee as IWC/65/CCRep05rev1.

adoption of CMPs for the southwest Atlantic southern right whale and the southeast Pacific southern right whale; endorsement of the guidelines, templates and funding principles for CMPs; adoption of the first phase of a global inventory of cetacean conservation measures, focusing on the Pacific Islands region; and the reconstitution of the then Small Advisory Group on CMPs into the present Standing Working Group on CMPs.

DEVELOPMENTS SINCE IWC/64

A meeting of the SWG-CMP was held in Brisbane, Australia on 26 May 2013 to progress its work. The meeting considered progress on those CMPs currently underway, as well as those being considered for development. The report of the Brisbane meeting can be found on the IWC's website.

The SWG-CMP welcomed a representative from the Secretariat of the Pacific Regional Environment Programme (SPREP), their first meeting as an observer, to discuss cetacean conservation measures in the Pacific Islands region. SPREP agreed to work with the SWG-CMP to update the inventory of Cetacean Conservation Measures in the Pacific Islands Region, with a focus on Oceania humpback whales, as endorsed by the Commission in 2012.

The SWG-CMP highlighted the importance of identifying, at a regional level, cetacean conservation initiatives and building on existing work. In this respect, the SWG-CMP agreed to continue to develop regional cetacean conservation inventories and to develop a plan to progress this work.

Finally, the SWG-CMP looked ahead strategically to the next phase of its work, and agreed to the development of a strategic framework.

CURRENT CMPS

Southwest Atlantic Southern Right Whale CMP

The Southwest Atlantic Southern Right Whale CMP was endorsed by the IWC in 2012. The overall objective of the CMP is to protect the southern right whale habitat and minimise anthropogenic threats to maximise the likelihood that southern right whales will recover to healthy levels and recolonise their historical range.

Several actions have been developed since the establishment of this CMP. A report of this activity for the period July 2013 to April 2014 was presented to the 2014 meeting of the IWC Scientific Committee (SC/65b/BRG18rev).

Progress on the following actions were reported:

RES-01: Argentina announced the availability of a vessel for research purposes in 2015 to carry out studies in two feeding grounds in the south west Atlantic using non-lethal techniques in an integrated way (satellite telemetry, photo-identification, passive acoustic, genetic, etc.).

Results from the *Tango* voyage to the Antarctic Peninsula area as part of the Southern Research Partnership's Antarctic Blue Whale Project (SORP/ABWP) was presented together with other research projects from Argentina and Brazil.

RES-02: The development of a GIS database on information on human activities that might have an adverse impact on whales was postponed to 2015 in order to optimise human resources and funds for this activity. Argentina received a Global Environment Fund grant which is coordinated by the Secretaría de Ambiente y Desarrollo Sustentable and includes determining human activities that might threaten Southern right whales. It is also necessary to secure funds to carry on this activity in Brazil, Chile and Uruguay.

MON-01: Results from two different projects on aerial surveys of southern right whales off the coast of Península Valdés developed by Instituto de Conservacion de Ballenas/Ocean Alliance (ICB/OA) and CENPAT were summarised as well as the results from land-based observation from Punta Flecha Observatory, Golfo Nuevo, Chubut province by FPN.

MON-02: Two programmes are working with Southern right whale strandings in the Península Valdés area. One is run by Red de Fauna Costera del Chubut, through its necropsies team, with collaboration from CENPAT and the Veterinary College, University of Buenos Aires, among others. The second is the Southern Right Whale Health Monitoring Program (SRWHMP). Analysis of skin lesions of southern right whales is also being carried out by CENPAT and the Veterinary College.

Uruguay reported two females stranded, one in 2011 and another one in 2012.

MIT-01: Following the disentanglement workshops conducted by David Mattila (international expert on disentanglement of big whales and member of the IWC Secretariat) two Brazilian and two Argentinean experts were trained at the Center for Coastal Research in Cape Cod, United States. The objective of the training is to enable experts to work on prevention measures.

One entanglement incident was reported in Argentina in 2013. The incident occurred 1.5 n.miles offshore of Las Grutas, Río Negro (40°49'51.0"S-65°4'35"O). Unfortunately the animal could not be released. Ten cases of confirmed different individuals (nine adults and one calf) were recorded for Brazil and three of them were later sighted free of the entanglement.

MIT-02: One of the priorities of the CMP is to develop and implement a strategy to minimise kelp gull harassment. On 28 and 29 August 2013, Dirección de Fauna y Flora Silvestre (Ministerio de Agricultura, Ganadería, Bosques y Pesca), Subsecretaría de Turismo y Áreas Protegidas, Administración de Parques Nacionales and CENPAT-CONICET hosted a workshop on the mortality of Southern right whales in Puerto Madryn. The main objective of the workshop was to explore the best way to properly disseminate information on this species to be used by the public media and to update results on southern right whale and mortality events.

An IWC Workshop to develop and implement a strategy to minimise kelp gull harassment on southern right whales was held in Puerto Madryn, Chubut on 5-7 August 2014. Funding for this Workshop was secured at the 2013 meeting of the IWC Scientific Committee. The Workshop was organised by the Argentinean Ministry of Foreign Affairs and the province of Chubut authorities. Results will be presented to the 2015 meeting of the IWC Scientific Committee (SC/66a).

MIT-03: An expert advisory panel was established with representatives from Argentina, Brazil, Uruguay and the IWC.

MIT-04: Ship strikes events from Argentina and Brazil for 2011 and 2012 were reported.

Southeast Pacific Southern Right Whale CMP

The Southeast Pacific Southern Right Whale CMP was endorsed by the IWC in 2012. The Plan aims to guide and encourage the recovery of the population to levels that will allow the species to withstand both environmental and anthropogenic impacts and ensure its long term survival.

A Steering Committee coordinator (Chile) and national working groups have been established to progress implementation of the CMP. A national working group coordination meeting was held in December 2012, with additional meetings held in June 2013 and September 2013.

Scientific research has been conducted under the CMP and has involved non-government organisations and the Chilean Navy. A recent publication in *Marine Mammal Science* revealed the first resighting of a known individual; the southernmost sighting of a cow-calf pair; and the first documented record of likely reproductive behaviour in the southern right whale population.

Conservation advances include the enforcement of whale watching regulations that only allow land-based whale watching of southeast Pacific southern right whales in Chile and a process commenced by the Chilean Navy to develop and implement a contingency plan to afford maximum protection to southern right whales when a sighting is recorded.

Western Pacific Gray Whale CMP

The Western Pacific Gray Whale CMP was approved by the International Union for the Conservation of Nature (IUCN) and endorsed by the IWC in 2010. The overall goal of the CMP is to manage human activities that affect western gray whales and maximise the population's chances for recovery, based on the best available scientific knowledge.

Satellite tagging programmes have been undertaken near Sakhalin Island by a team of international researchers, on the migration routes of three gray whales from the western population, *Flex*, *Agent* and *Varvara*. One of the tagged whales was found to visit all of the major Mexican eastern gray whale breeding grounds, which may indicate the possibility for genetic mixing between the two populations. Further satellite tagging and genetic research is required. Investigations have also revealed the appearance of new adult whales and the re-emergence of adult individuals that had been absent for five to seven years with some individuals from the Sakhalin region appearing in photo catalogues in the USA. Together these results highlighted that the eastern and western populations may not be isolated and that the possibility of genetic exchange was significant.

A Memorandum of Cooperation concerning Conservation Measures for the Western Gray Whale Population (MoC) is expected to be signed at IWC/65 by the range states of the western gray whale population. Parties to the MoC will agree, subject to the availability of resources, to implement in their respective countries the terms of the Conservation Plan for Western Gray Whales. The Conservation Plan aims to reduce incidental mortality, increase population numbers and enhance international co-operation, and includes *inter alia*:

- identify and conserve key sites and implement measures to protect the traditional wintering, migration and feeding areas of the western gray whale;
- develop national conservation action plans;
- develop proposals for monitoring, research and practical measures for the recovery of the western gray whale;
- designate a national point of contact from the competent authority;
- identify proposals for the establishment of a funding mechanism for these conservation measures;
- cooperate with the Western Gray Whale Advisory Panel of the IUCN and the IWC Head of Science; and
- discuss national reports and future activities during IWC sessions or other relevant international meetings.

CMP PLANNING AND DEVELOPMENT

Arabian Sea humpback population

The Arabian Sea humpback population had previously been recognised by the Scientific Committee as an ideal candidate for a CMP. Members of the intersessional correspondence group on the Arabian Sea population, together with partners from regional non-government organisations, have begun work to establish a regional research and conservation programme for this population. The programme aims to help to initiate and foster collaborative research amongst range state partners, increase local capacity and generate awareness of Arabian Sea humpback whale conservation issues.

During the last year, a consortium of non-government organisations and active researchers in the region have continued to progress this work, including identifying priority tasks to be undertaken such as: genetic analysis of existing biopsy samples, field survey training, continuation of surveys and satellite tracking studies in Oman, and preliminary surveys in the Gulf of Kutch on the Pakistan-India border.

At its meeting in May 2014, the Scientific Committee welcomed efforts to develop regional cooperation for research and capacity and recommended the priority tasks listed above. The Committee also reiterated its serious concern about the endangered status and threats facing this distinct population and urged IWC and range states to consider the nomination of the Arabian Sea humpback whale for a CMP, given the benefits that a regional framework would provide.

Marine debris

At its meeting in 2012 (IWC/64), the Commission accorded high priority to the issue of marine debris and noted the potential and actual threats to cetaceans. The Commission endorsed a joint recommendation from the Commission's Scientific and Conservation Committees to hold Workshops to address this issue. The first IWC scientific preparatory Workshop on Marine Debris was held at the Woods Hole Oceanographic Institution in the USA in May 2013. The IWC Scientific Committee reviewed the Workshop report at its May 2013 meeting and endorsed its recommendations[2] and agreed that marine debris and its contribution to entanglement, exposures including ingestion or inhalation, and associated impacts, including toxicity, are welfare and conservation issues for cetaceans on a global scale and a growing concern. The Scientific Committee also agreed that the issue of marine debris is appropriate for consideration as the Commission's first threat-based Conservation Management Plan and recommended 'incorporating consideration of marine debris into IWC conservation management plans where appropriate and to consider making it the focus of a plan in its own right'.

The IWC's second Workshop on Mitigation and Management of the Threats posed by Marine Debris to Cetaceans was held in Honolulu from 5-7 August 2014. Marine debris is a real threat to cetaceans but is a major environmental issue in its own right with important international and national initiatives already underway. The Workshop recommended that the IWC's contribution to existing initiatives will be to ensure cetacean-related issues are adequately represented and to contribute IWC scientific and other expertise to collaborative efforts. The

[2]See *J. Cetacean Res. Manage. (Suppl.)* 15: Annex K [2014] for full details.

Workshop agreed that components of a marine debris CMP should include consideration of the development of best management practices for preventing cetacean entanglement in marine debris and the possibility of working with relevant stakeholders on one or more pilot projects to address ghost gear in specific areas. The Workshop also agreed that extensive consultation with relevant intergovernmental organisations should be undertaken by the SWG-CMP, prior to developing a CMP, to consider how this fits best with existing initiatives. The Workshop recommended that the SWG-CMP could consider establishing a marine debris sub-group to progress this work. The Workshop report and recommendations will be finalised and submitted to IWC/65.

The SWG-CMP thanks the Scientific Committee, the Conservation Committee, Workshop convenors and all Workshop participants for their advice on addressing the impacts of marine debris on cetaceans that could form the basis of a possible marine debris threat-based CMP (if appropriate). This includes advice to incorporate marine debris into existing CMPs and to consult widely with relevant organisations prior to development of a CMP that would link the IWC's work to existing international marine debris initiatives.

LIST OF PRIORITY SPECIES

At its meeting in 2012 (IWC/64), the Commission agreed to the 2011 recommendation of the then Small Advisory Group on CMPs that the Scientific Committee undertake an analysis of priority candidates for future CMPs. The report of the Small Advisory Group highlighted that such a list would be useful in informing discussions within the Commission, including on matters relating to CMP funding support.

At its meeting in 2013 (SC/65a), the Scientific Committee agreed that those populations with CMPs currently in place (western gray whales, southwest Atlantic right whales and southeast Pacific right whales) remain a high priority for such plans. The Committee further identified that the following populations should be considered for a CMP if supported by range states:

- Arabian Sea humpback whales;
- minke whales in the coastal waters of China, Japan and Republic of Korea (see commentary); and
- North Pacific right whales.
- Other populations were identified because of known threats rather than population status:
- northern Indian Ocean blue whales (ship strikes);
- Mediterranean fin whales (ship strikes); and
- Mediterranean sperm whales (entanglement and ship strikes).

The SWG-CMP thanks the Scientific Committee for its work in preparing the list of priority species of great whales and agrees with its recommendation to develop a CMP for the Arabian Sea population of humpback whales as a priority. The development of a CMP for this population would facilitate the implementation of practical management measures on a regional basis aimed at improving the conservation status of these whales across their range.

The SWG-CMP further encourages range states to consider the development of a CMP for the other populations identified by the Scientific Committee. These have been included in the draft Conservation Management Plans Work Plan 2014-20 for future action (see Annex B).

The SWG-CMP also recommends that the Scientific Committee be requested to undertake further analysis on priority candidates of cetaceans, including small cetaceans, that would benefit from the implementation of a CMP.

REGIONAL INVENTORIES OF CETACEAN CONSERVATION MEASURES

At the 2012 meeting of the Commission (IWC/64), Australia submitted a report on 'Cetacean Conservation Measures in the Pacific Islands Region, with a focus on Oceania Humpback Whales'. The report provided a preliminary inventory of the cetacean conservation measures currently in place in the Pacific Islands region. The report encompassed 25 countries and territories in the region and highlighted the many different ways these countries and territories have pursued cetacean conservation at the national, regional and international levels. The SWG-CMP has been working with the Secretariat of the Pacific Regional Environment Programme (SPREP) to update the inventory with new measures that have been agreed since its completion; species-specific conservation measures in place across the region; and a list of IGOs/NGOs in the region that have an interest in cetacean conservation.

The preliminary inventory of cetacean conservation measures in the Pacific has enabled the Commission and IWC member countries to identify cetacean conservation management gaps, and opportunities for addressing these, through a collaborative regional approach. At its meeting in Brisbane, in May 2013, the SWG-CMP agreed that the Indian Ocean and the Arctic are good candidates for the development of regional inventories. The SWG-CMP also recommends that a regional inventory for the Indian Ocean be developed during the 2014-16 intersessional period and progress be reported to the Commission at IWC/66 2016.

At its meeting in Brisbane, in May 2013, the SWG-CMP also agreed it would be useful for the Scientific Committee to review the Oceania Humpback Recovery Plan from a CMP perspective and make an assessment of whether there are gaps in the Plan that could be addressed by the Commission. The SWG-CMP therefore recommends the Scientific Committee be requested to undertake this work.

STRATEGIC DIRECTION

Given that CMPs are a key component of the Commission's work plan, bringing together science and conservation management to deliver concrete practical actions, the SWG-CMP agreed at its meeting in Brisbane in May 2013 to develop a framework to guide the development and implementation of current and future CMPs and to guide the work of the Commission into the future. The SWG-CMP has continued to progress this initiative during the intersessional period and a draft Conservation Management Plans Work Plan 2014-20 is attached here at Annex B for consideration by the Conservation Committee and endorsement by the Commission.

The draft Work Plan sets out the objectives and actions designed to facilitate the development and implementation of CMPs in a manner that is consistent with national best practice. It outlines priorities for existing CMPs; and future CMPs, including priority species, threats and habitats and the development of regional inventories and areas for further research. The draft Work Plan also highlights the need for continuous improvement of the CMP guidelines, templates, funding principles and overall development process; as well as considering potential avenues for strengthening funding for CMPs.

Annex A

Terms of Reference for the Standing Working Group on Conservation Management Plans[3]

The Standing Working Group on Conservation Management Plans (the SWG-CMP) is responsible for the provision of advice on the nomination, development and implementation of CMPs endorsed by the International Whaling Commission (IWC).

The SWG-CMP will be comprised primarily of members of the Conservation Committee, but will also include members from the Scientific Committee and members from other IWC bodies as appropriate, together with Commission members from range states and interested observers. The Chair will be elected from members of the SWG-CMP and may hold the position for a period of up to four years.

The SWG-CMP will report to the Commission through its Conservation Committee.

Conservation Management Plans are intended to be a practical and flexible management tool for the IWC to manage human and cetacean interactions for those populations, threats or habitats of greatest conservation concern and where there is a reasonable expectation that the plan will deliver real conservation gains. The SWG-CMP will support development of comprehensive plans tailored to address the species, habitat or threats of the most pressing need and with the greatest likelihood of success.

Duties of the SWG-CMP may include, but are not limited to:

- recommending priority cetacean populations, threats or habitats suitable for the preparation of a CMP;
- providing up-to-date guidelines and templates to support the nomination, development, implementation and monitoring of CMPs;
- establishing appropriate criteria to assess the merits of proposed CMPs;
- providing appropriate guidance to proponents of CMPs to support best practice nomination, development and implementation;
- facilitating provision of data and expert advice from relevant IWC Committees and sub-committees, as appropriate;
- reporting to the Conservation Committee on the status of existing CMPs;
- advising the Commission, through the Conservation Committee, on funds or other resources requested to support the nomination, development, or implementation of a CMP; and
- undertaking other activities as directed by the Commission or Conservation Committee.

Annex B

Draft International Whaling Commission Conservation Management Plans Work Plan 2014-2020

INTRODUCTION

- Over-exploitation has severely reduced many populations of the world's great whales, some to near extinction. Although the cessation of large-scale industrial whaling has resulted in a number of populations starting a slow recovery, some remain severely depleted.
- Current and future threats to cetaceans will not be limited to whaling activities. Threats have already emerged relating to global problems such as climate change, marine debris and pollution, habitat destruction, ship strikes and unregulated wildlife tourism. Meeting these future global challenges will require tailored and flexible approaches, with threats likely to be multiple, complex and differing between regions and populations.
- The International Whaling Commission (IWC) promotes a wide range of initiatives aimed at improving the conservation status of cetacean populations. Conservation Management Plans (CMPs) are an important conservation initiative of the IWC that aim to recover critically endangered whale populations and other cetaceans. Introduced at the 2008 Commission meeting (IWC/60), CMPs provide a practical management tool for improving conservation outcomes for the most at risk cetacean populations, and in some cases are the only management tool introduced by the IWC that address all threats facing cetaceans.
- Three CMPs have been endorsed by the IWC to date and are currently being implemented. These include the western North Pacific population of gray whales and two populations of southern right whales along the eastern and western coasts of South America.
- Further Plans are in preparation and the Commission has agreed guidelines, templates and funding principles to assist with the development of CMPs, and has established a Standing Working Group on CMPs (SWG-CMP).

[3]Draft Terms of Reference for the Group were published in IWC/63/CC5, but the Commission was not afforded sufficient time at IWC/63 to give consideration to CMPs. The draft Terms of Reference were subsequently adopted at IWC/64, see *Ann. Rep. Int. Whaling Comm.* 2012: 38 [2013].

International framework

- CMPs are consistent with both the purpose and provisions of the International Convention for the Regulation of Whaling (ICRW), specifically the desire to provide for the 'proper and effective conservation and development of whale stocks'.
- Article V(1) of the ICRW provides that the Commission may adopt measures with respect to the conservation of whale resources.
- Within the IWC, work on CMPs is directed by the SWG-CMP. This work forms part of the wider, on-going programme of the IWC Conservation Committee.
- The SWG-CMP includes membership from the IWC Scientific Committee to facilitate closer links between the Conservation and Scientific Committees on this issue and ensure that policy/management advice is underpinned by the best available science.

Why CMPs are a priority for the IWC

- Cetaceans are a diverse group, and their conservation management requires an equally diverse strategy. Some species are highly migratory, depending on multiple marine ecosystems, while others have a limited geographic range.
- The historical approach of the IWC toward conservation has been to address the primary historical threat to cetaceans (i.e. over-exploitation) through regulation of the whaling industry: establishment of catch quotas, seasonal whaling schedules, technology restrictions, no-take zones and stock specific whaling status.
- However, future threats to cetaceans will not be limited to whaling activities. Threats have already emerged relating to global problems such as climate change, marine debris and pollution, habitat destruction, ship strikes and unregulated wildlife tourism. Meeting these future global challenges will require tailored and flexible approaches, with threats likely to be multiple, complex and differing between regions and populations. CMPs are a unique management tool introduced into the IWC with the capacity to address the range of threats facing cetaceans.

What is a CMP?

- ***Conservation strategies*** **-** CMPs are conservation strategies based on the best available science and management expertise, focussing on practical management of human activities that impact cetaceans. CMPs are management tools that require clear objectives and should be applied when there is a reasonable expectation that they deliver real conservation gains to cetacean populations. Practical objectives that result in measureable gains are essential. CMPs should be considered living documents, subject to regular review and revised as necessary, consistent with the principle of adaptive management.
- ***Collaborative agreements*** **-** CMPs are non-binding documents, designed to address in a coordinated and collaborative way, transboundary gaps in existing conservation measures at a regional level. They are designed to complement but not replace existing international and domestic measures.
- ***Targeted recovery*** **-** CMPs can address specific cetacean populations, habitats or threats.
- ***Partnerships*** **-** CMPs are multilateral in scope. They are developed and implemented by more than one range state, in collaboration with relevant stakeholders. The active involvement of key stakeholders is essential to a successful CMP. CMPs guide partnerships between the IWC and relevant stakeholders including range state governments, non-government organisations (NGOs) and inter-governmental organisations (IGOs). It is highly recommended that CMP implementation be coordinated through a Steering Committee that consists of suitably qualified candidates and experienced members representing key stakeholder partners to the CMP.
- ***Science and Management*** **-** The effective conservation of cetaceans requires scientific and management input. An important aspect of CMPs is effective collaboration between the IWC's Scientific and Conservation Committees.
  - The Scientific Committee collects and distributes scientific data and assists in the determination of priority species listing, threats to cetaceans and key cetacean habitats. Members of the Scientific Committee are represented on the SWG-CMP, ensuring the best scientific information is available. Plans should be informed by rigorous science, while at the same time adhering to the principles of the precautionary approach.
  - The Conservation Committee provides management and policy advice and reports to the IWC on CMP progress based on advice received from the SWG-CMP and CMP proponents.
- ***Flexible and adaptable*** **-** CMPs are living documents that are reviewed periodically based on monitoring of the populations concerned, assessment against measureable targets, and compliance with and enforcement of agreed measures, consistent with the principles of adaptive management.

Development of CMPs under the IWC

- A proposal to develop a CMP is endorsed by the Commission when the underlying science demonstrates that urgent conservation action is needed and that coordinated action is likely to lead to real conservation gains.
- The development of a CMP is a three stage process:
  - nomination;
  - development; and
  - implementation and review.
- A CMP nomination can be submitted to the Commission by a Contracting Government or an established body of the Commission, such as the Conservation Committee or Scientific Committee. The SWG-CMP can play an important coordinating and supporting role during the nomination process.
- Nominations are reviewed by the Scientific and Conservation Committees prior to being submitted to the Commission for consideration of endorsement.
- The Commission has agreed guidelines, templates and funding principles to assist with the development of CMPs available here: [embed web link when available].
- The implementation of endorsed CMPs is at the discretion of participating range states and relevant stakeholders, and supported by a CMP coordinator, Steering Committee and implementation strategy.
- The IWC's SWG-CMP is responsible for providing advice on the nomination, development and implementation of CMPs endorsed by the Commission; coordinating advice from the Scientific Committee and other parties; and conveying recommendations to the Conservation Committee. The SWG-CMP is also required to evaluate

the progress and implementation of CMPs through reports to the IWC (through the Conservation Committee). The terms of reference for the SWG-CMP can be found here: [embed web link when available].
- A process map outlining the steps involved in developing a CMP is available here: [embed web link when available].

Funding for CMPs
- Funding for CMPs is drawn from a range of sources. Proponents of a CMP, including signatory range states, have been the primary sources of funding for the development and implementation of a CMP.
- There is a need for dedicated Commission funds for the progression of CMP related work. The Commission currently has two streams of funding that may be available to assist with the development and implementation of CMPs: voluntary contributions received from Contracting Governments for conservation purposes; and the Scientific Committee Research Fund. The Working Group on Conservation Financing should add the examination of possible funding sources into its work programme.
- Voluntary contributions from Contracting Governments totalling almost GBP £250,000 were used to establish an IWC CMP fund in 2009. CMP proponents are able to seek Commission agreement to use these funds to assist with the development and implementation of CMPs.
- Consideration by the Commission on whether to support a CMP, and to what degree, is informed by the capacity of participating range states to pay; conservation priority; the cost effectiveness of agreed actions; and funding availability.
- Information on CMP funding principles and processes are outlined in the CMP Guidelines available here: [embed web link when available].

CMP WORK PLAN 2014-2020

Scope and Structure
- This Work Plan sets out the objectives and actions designed to facilitate the development and implementation of CMPs in a manner that is consistent with international best practice.
- This Work Plan is intended to be a living document, subject to active review and readjustment in line with the principles of adaptive management.

Vision
To assist the Commission in its conservation mandate by providing a strategy to guide the development and implementation of current and future CMPs to improve conservation outcomes for the most at-risk cetacean populations.

Objectives
- The aim of this Work Plan is to provide a framework to guide the development and implementation of current and future CMPs.
- A significant focus of this Work Plan is to ensure current and future CMPs are regularly reviewed and evaluated to increase their efficacy and ensure plans are adapted to reflect changing circumstances.
- This Work Plan is intended to provide direction to the efforts of the IWC, the Conservation Committee, the Scientific Committee and the SWG-CMP. Its adoption does not change the responsibilities of Contracting Governments.
- Involvement in the actions of the Work Plan is on a voluntary basis and is intended to complement other national or international legislation, frameworks or plans that support the conservation of cetaceans.

Priorities 2014-2020
1. Existing CMPs
- Three CMPs are currently being implemented: for the western North Pacific gray whale, the southwest Atlantic southern right whale and the southeast Pacific southern right whale. A brief description of these plans is outlined below.

WESTERN NORTH PACIFIC GRAY WHALE CMP
- The western gray whale population is considered critically endangered by the International Union for the Conservation of Nature (IUCN), numbering only about 130 animals in 2008. Although there is evidence to suggest the population is slowly recovering, it remains on the edge of survival. The IWC Scientific Committee has expressed great concern about this population and highlighted the urgent need to reduce anthropogenic mortality to zero.
- The Western North Pacific Gray Whale CMP was endorsed by the Commission in 2010 and is being implemented by the Western Gray Whale Advisory Panel, working with key stakeholders, range state governments, civil society, industry, the IUCN and the IWC.
- The overall goal of the Plan is to reduce mortality related to anthropogenic activities to zero and maximise the population's chances for recovery, based on the best scientific knowledge.
- Progress to date includes information on migratory trends obtained from satellite tagging and photo identification studies. This information has highlighted the need to ensure long-term monitoring to further establish the populations movements and interactions.

PRIORITIES 2014-20
  - Development of a web-based exchange of scientific information.
  - Development of range state specific strategies to increase public awareness and build capacity of states to respond to sightings of whale populations.
  - Development of a GIS database on the locations of set nets, gill nets and pot/trap gear within the western gray whale range.
  - Ensuring long-term monitoring of population abundance and trends through photo-identifications and biopsy sampling.
  - Reduce entanglement mortality through stakeholder training in whale release methods and notification systems
- The CMP is reviewed annually.
- The Western North Pacific Gray Whale CMP is available here: [embed web link when available].

SOUTHWEST ATLANTIC SOUTHERN RIGHT WHALE CMP
- Although southern right whales are classified as Least Concern by the IUCN, the species was severely depleted by the whaling industry and illegal hunting in the 1950s and 1970s, which has delayed the population's recovery. Some South Atlantic southern right whale populations are increasing at around seven per cent annually. However, the survival and recovery of the southwest Atlantic southern right whale, which was estimated at around 4,000 individuals in 2010, requires prompt and effective conservation action.

- One of the key concerns facing this population is the recent and widespread die-off events of infant southern right whales. An IWC Southern Right Whale Workshop held in 2011 highlighted that 91 per cent of southern right whale deaths since 1971 have been first year whale calves. The Workshop noted that identifying the causes of this unusual mortality is key to being able to understand possible long-term effects on the population and to developing effective mitigation and conservation measures.
- The Southwest Atlantic Southern Right Whale CMP was endorsed by the Commission in 2012. The overall objective of the CMP is to protect the habitat of this population, minimising anthropogenic threats to maximise population levels. The plan provides a platform and framework for range states to work collaboratively and cooperatively to monitor population recovery and to address actual and potential threats to the population.
- CMP progress to date includes the appointment of a Coordinator and a Steering Committee, research into the population's geographic interaction and capacity building of range states to respond to whale strandings.

PRIORITIES 2014-20

- Development of a strategy specific to each range state to increase public awareness of the conservation status of and potential threats to southern right whales and build capacity in range states to respond to entangled or stranded whales.
- Determination of movements, migration routes and location of feeding ground(s) through satellite telemetry.
- Ensuring long-term monitoring of abundance, trends and biological parameters through photo-identification and biopsy sampling.
- Development of a regional entanglement response strategy.
- Establishment of an expert advisory panel to review environmental impact assessments associated with human activities that may affect southern right whales in the region

- The CMP is reviewed annually with comprehensive evaluation every 3-5 years.
- The Plan can be found on the Commission's website at: [embed web link when available].

EASTERN SOUTH PACIFIC SOUTHERN RIGHT WHALE CMP

- The eastern South Pacific population of southern right whales is classified as critically endangered by the IUCN and is estimated to number less than 50 mature individuals. The population has not shown the repopulation rates observed in other right whale populations in the South Atlantic.
- The Eastern South Pacific Southern Right Whale CMP was endorsed by the Commission in 2012. The Plan aims to guide and encourage the recovery of the population to levels that will allow the species to withstand both environmental and anthropogenic impacts and ensure its long term survival.
- Progress to date of this CMP include the appointment of a Coordinator and a Steering Committee, establishment of national working groups, the regulation of the whale watching industry to land-based activities only and strategies to build the capacity of range states to respond to sightings of the population.

PRIORITIES 2014-20

- Development of a web-based exchange of scientific information.
- Creation of capacities in coastal communities on species identification and sightings reporting, including the documentation of sightings.
- Ensuring long-term monitoring of distribution, abundance and trends of southern right whales including the identification of breeding grounds.
- Ensuring long-term monitoring of potential threats and effectiveness of mitigation measures.
- Development and implementation of a contingency plan to afford maximum protection to whales when a sighting is recorded.
- Inclusion of conservation considerations and mitigation measures in the Environmental Impact Evaluation and Permitting System for Large-Scale Coastal/Marine Projects.

- The Plan can be found on the Commission's website at: [embed web link when available].

2. Future CMPs

In accordance with an increasing focus on conservation initiatives under the IWC, and as existing plans begin to demonstrate real conservation outcomes for targeted whale populations, CMPs are likely to become an important tool for the Commission.

Development of future CMPs will be dependent upon collaboration and cooperation between the IWC Scientific and Conservation Committees. The IWC, as the global premier cetacean institution, houses extensive expertise in both cetacean research and management. Capitalising on this knowledge base will be crucial to the development of future CMPs - particularly in designating priority species, monitoring population levels and developing effective mitigation measures.

Engagement with key stakeholders will also be important in the development of future CMPs. The IUCN has already proved to be a valuable partner in the designation of priority species, particularly their cetacean species red list reporting [embed web link when available].

As outlined in the introduction to this Work Plan, CMPs can address specific cetacean populations, threats or habitats. These will be the basis for future plans.

PRIORITY SPECIES

ARABIAN SEA HUMPBACK WHALES

- This population was first suggested as a possible candidate for the development of a CMP in 2010. The population is listed as endangered by the IUCN and is believed to comprise only 82 individuals (based on an assessment conducted in 2008).
- Observations of severe entanglement scarring, coastal infrastructure developments, offshore hydrocarbon exploration, the potential for unregulated whale-watching and the planned commencement of new shipping routes and increased shipping traffic through known habitats are a real cause for concern.
- The IWC's Scientific Committee has noted that humpback whales in the Arabian Sea constitute a small and isolated population that is vulnerable to human activities, and that sufficient data exists to commence a process aimed at developing a CMP. To facilitate this process, an intersessional Working Group of the Scientific Committee was formed in 2011.
- Consistent with advice from the Scientific Committee, research on this population has continued, along with efforts amongst scientists and NGOs to establish a regional initiative to coordinate conservation efforts for the population.

PRIORITY THREATS

MARINE DEBRIS

- The 2013 IWC Marine Debris Workshops recognised the potential significant impacts that marine debris can have on cetaceans through macrodebris entanglement and ingestion, and through chemical exposures or ingestion of microplastics.
- In considering the report of the 2013 Marine Debris Scientific Workshop, the Scientific Committee recommended the Commission take prompt action to help better understand and address the growing problem of marine debris, including incorporating consideration of marine debris into CMPs, where appropriate, and considering making marine debris the focus of a plan in its own right.
- A second IWC Workshop on Management Action to Address the Impacts of Marine Debris on Cetaceans will be held in August 2014. This Workshop will aim to populate a draft threat-based CMP targeting marine debris and it's impacts on priority whale populations.
- The IWC's second Workshop on Mitigation and Management of the Threats posed by Marine Debris to Cetaceans was held in Honolulu from 5-7 August 2014. Marine debris is a real threat to cetaceans but is a major environmental issue in its own right with important international and national initiatives already underway. The Workshop recommended that the IWC's contribution to existing initiatives will be to ensure cetacean-related issues are adequately represented and to contribute IWC scientific and other expertise to collaborative efforts. The Workshop agreed that components of a marine debris CMP should include consideration of the development of best management practices for preventing cetacean entanglement in marine debris and the possibility of working with relevant stakeholders on one or more pilot projects to address ghost gear in specific areas. The Workshop also agreed that extensive consultation with relevant intergovernmental organisations should be undertaken by the Working Group, prior to developing a CMP, to consider how this fits best with existing initiatives. The Workshop recommended that the Working Group could consider establishing a marine debris sub-group to progress this work. The Workshop report and recommendations were submitted to IWC/65 in September 2014.

NOISE

- Anthropogenic noise, hearing and vocalisation are extremely important to cetaceans, especially for communication and foraging, although the degree of importance and acoustic ability vary amongst species. Increased human-created or 'anthropogenic' noise, either in acute form (such as seismic surveys or military sonar) or chronically in terms of a general increase in noise in the marine environment (such as from shipping and industrial activities) is an important factor to consider when examining potential threats to cetacean populations. The Scientific Committee has identified a need for coordinated research to address the questions posed by the effects of increasing ocean noise.
- In April 2014 a two-day expert Workshop [embed web link once Workshop report is available] was held to investigate sound field mapping of chronic and lower intensity noise sources. This technical Workshop was jointly sponsored by the IWC, the International Quiet Ocean Experiment (IQOE), the United States National Oceanic and Atmospheric Administration (NOAA) and the Dutch Ministries of Infrastructure and the Environment and Defence.
- The aim of the technical Workshop was to evaluate regional and ocean-basin scale underwater sound field mapping and modelling techniques and to increase their accessibility to a wider range of stakeholders. Investigation into anthropogenic noise will inform and assist researchers, governments and industry decision-makers seeking to characterise, monitor and manage the potential impact of chronic or cumulative noise.

CHEMICAL POLLUTION

- The Scientific Committee has been examining the issue of chemical pollutants impacts upon cetaceans since the early 1980s. This is a complex issue given the huge number of synthetic chemicals introduced into the environment, the difficulty in establishing whether they have an effect, and quantifying any effects detected. However, as agreed at a specialist Workshop in 1995, there were sufficient indications from other taxa of potential damaging effects on health (such as a susceptibility to disease and poorer reproductive success) to warrant concern for cetaceans.
- A major IWC research programme, 'Pollution 2000+', was initiated to investigate pollutant cause-effect relationships in cetaceans. Pollution 2000+ completed its first phase [embed web link when available] in 2007 and work has progressed on its second phase [embed web link when available] in late 2013. Continued research on the impact of pollutants upon cetaceans will remain a priority concern when addressing threats to cetacean populations, and subsequent mitigation measures, for future CMPs.

PRIORITY HABITATS

- Although there is currently no consideration being given to developing a CMP to address critical cetacean habitats, this may be the subject of a CMP in the future.

REGIONAL INVENTORIES

- The Commission agreed in 2011 to undertaking inventories of cetacean conservation measures, such as recovery plans and management plans, currently in place or underway by jurisdiction on a regional basis. This is to enable the identification of management gaps, and opportunities for addressing these gaps, through a collaborative, regional approach.
- In 2012, the first regional inventory, Cetacean Conservation Measures in the Pacific Islands Region, with a focus on Oceania Humpback Whales, was endorsed by the Commission. The inventory provides a preliminary register of cetacean conservation measures in place in the Pacific Islands region. The IWC is continuing to work with the Pacific Islands region to update the inventory to include new management measures that have been agreed since its completion, as well as species-specific conservation measures across the region and a list of stakeholders with an interest in cetacean conservation.
- With the imminent completion of the Pacific inventory, the SWG-CMP has agreed to consider other regional candidates where inventories could be compiled, using the Pacific inventory as a model.
- The Indian and Arctic oceans were considered good candidates for the development of regional inventories. Agreement to the proposed inventories and a timeline for their development will be sought at the Commission's next meeting in 2014.
- Cooperation with regional bodies and organisations, such as the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS), Agreement on the Conservation

of Small Cetaceans in the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) and the Pacific Regional Environmental Program (SPREP), will form an essential component in the development of future regional inventories. Stakeholders provide valuable input to the development of regional inventories, including information relating to cetacean conservation measures, the identification of mitigation gaps, and potential partnerships for developments of future CMPs.

FURTHER RESEARCH 2014-20

The Scientific Committee has outlined a list of potential candidates for future CMP's that require further research including:

BLUE WHALES IN THE NORTHERN INDIAN OCEAN

- There are currently no population estimates for this population, but there have been a number of reported ship strikes of this population off Sri Lanka. This detrimental interaction highlights the necessity for long-term monitoring of this population in Sri Lankan and surrounding waters to ascertain whether this population would benefit from a CMP.
- At IWC/64 in 2012, the Scientific Committee noted new quantitative information on ship strikes in Sri Lanka and raised concern about the issue. The IWC Secretariat wrote to the Sri Lankan government in June 2013 offering Scientific Committee assistance to address the issue of ship strikes off the southern coast of Sri Lanka as one of the busiest shipping routes in the world that overlaps with an area of high whale sightings, including blue whales.

FIN WHALES IN THE MEDITERRANEAN SEA

- This population is listed as Vulnerable by the IUCN and is known to be subject to high levels of ship strikes. The IWC and ACCOBAMS have a joint work plan to address ship strikes in the Mediterranean. Further evaluation is required as to whether a CMP would assist the current work of the IWC, ACCOBAMS and range states.

SPERM WHALES IN THE MEDITERRANEAN SEA

- This population is listed as Endangered by the IUCN and is at risk from driftnet entanglement and ship strikes. As with the fin whales in the Mediterranean, further evaluation is required to determine whether this population would benefit from the development of a CMP and would assist the current work of the IWC, ACCOBAMS and range states.

NORTH PACIFIC RIGHT WHALES

- This population is listed as Endangered by the IUCN. The Scientific Committee has noted concern over the small size of this population, and the need for more research to understand its distribution, assess threats and identify actions that could be taken to reduce these. Range states for this population are the same as for the current CMP on western Pacific gray whales and there may be options for integrating North Pacific right whales with this Plan.

COMMON MINKE WHALES IN THE COASTAL WATERS OF CHINA, JAPAN (ESPECIALLY THE WEST COAST) AND THE REPUBLIC OF KOREA

- Due to the uncertainties in stock structure and high levels of incidental bycatch of this population, consideration was given by the Scientific Committee as to whether this population would benefit from the development of a CMP. However, it was considered premature to put this proposal forward at the time due to these uncertainties and the poor survey coverage in some areas.

SMALL CETACEANS

- Despite the differing views within the Commission concerning the IWC's legal competence over small cetaceans, the IWC does recognise the need for further international cooperation to conserve and rebuild depleted stocks of small cetaceans.
- The IWC has encouraged countries to seek scientific advice on small cetaceans from the IWC and also invited IWC member nations to provide technical or financial assistance to countries with threatened small cetaceans stocks. The IWC has also established a Voluntary Fund to encourage research projects focussed on small cetacean conservation with an emphasis on capacity building within developing countries.
- A Conservation Plan for Harbour Porpoises in the North Sea has been adopted by the parties of ASCOBANS. This plan, acknowledging the threats to this population from bycatch and live strandings, agreed to a series of priority actions to aid investigation into the conservation status of this population. Actions include research to fill in existing information gaps, collection of incidental bycatch data and the establishment of bycatch observation plans and management procedures.

3. Strengthening CMP guidelines, governance and communication

- Continuous improvement of the CMP guidelines, templates, funding principles and overall development process will be a priority during 2014-20 to ensure they reflect best practice, are efficient and user-friendly and offer the best support to potential CMP proponents.
- Provision of further guidance to prospective CMP proponents to assist with the development and implementation of CMPs. This includes guidance on the development of risk assessments, the development of strategies to assist with CMP implementation, monitoring and review processes, and the development of guidelines and templates for reporting CMP implementation progress to the IWC.
- Improving IWC governance to support the development and implementation of current and future CMPs will be another priority going forward. There is scope to streamline IWC governance processes and operating procedures to ensure the IWC is able to provide the best science, conservation management, approval processes and monitoring to support CMPs consistent with international best practice. Improved coordination between the Scientific Committee, Conservation Committee, SWG-CMP, and Commission will be priority.
- A review of the SWG-CMP Terms of Reference is recommended within the 2014-20 timeframe to ensure the working group is effectively operating in light of research and implementation developments.
- Reporting and communicating achievements with CMPs will be a priority for 2014-20 to help promote CMPs as effective frameworks to improve the conservation status of at risk cetacean populations.

4. Strengthening funding for CMPs

- A priority for 2014-20 will be to focus on how funding for CMPs can be sustained into the future and reduce the burden of costs relating to the nomination and development of plans being borne predominantly by range states.
  - The Working Group on Conservation Financing should investigate funding options utilising Commission funds.

  - Other options include encouraging more voluntary contributions from stakeholders and range states, as well as investigating funding from external sources, such as the Global Environment Facility, World Bank, development banks, other multilateral environmental organisations, business and the private sector with an interest in cetacean conservation.
- There will be increasing pressure to use funds from the Commission's CMP fund to assist range states establish Coordinators and Steering Committees to facilitate the implementation of the Plans.
- Facilitating external representations to the SWG-CMP and the IWC will also promote good governance for CMPs. The United Nations Environmental Programme (UNEP) and SPREP hold observer status in the SWG-CMP and the IUCN works closely in data collection and distribution. Incorporating relevant stakeholders and interested parties in the governance framework of CMPs is important in utilising the best knowledge basis.

International Convention

for the

Regulation of Whaling

signed at Washington, 2 December 1946

and its

Protocol

signed at Washington, 19 November 1956

The Schedule which is attached to the Convention and under Article I forms an integral part thereof is amended regularly by the Commission. The most recent version begins on p. 337 of this volume.

INTERNATIONAL
WHALING COMMISSION

International Convention

for the

Regulation of Whaling

Washington, 2nd December, 1946

The Governments whose duly authorised representatives have subscribed hereto,

Recognizing the interest of the nations of the world in safeguarding for future generations the great natural resources represented by the whale stocks;

Considering that the history of whaling has seen over-fishing of one area after another and of one species of whale after another to such a degree that it is essential to protect all species of whales from further over-fishing;

Recognizing that the whale stocks are susceptible of natural increases if whaling is properly regulated, and that increases in the size of whale stocks will permit increases in the number of whales which may be captured without endangering these natural resources;

Recognizing that it is in the common interest to achieve the optimum level of whale stocks as rapidly as possible without causing widespread economic and nutritional distress;

Recognizing that in the course of achieving these objectives, whaling operations should be confined to those species best able to sustain exploitation in order to give an interval for recovery to certain species of whales now depleted in numbers;

Desiring to establish a system of international regulation for the whale fisheries to ensure proper and effective conservation and development of whale stocks on the basis of the principles embodied in the provisions of the International Agreement for the Regulation of Whaling, signed in London on 8th June, 1937, and the protocols to that Agreement signed in London on 24th June, 1938, and 26th November, 1945; and

Having decided to conclude a convention to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry;

Have agreed as follows:-

Article I

1. This Convention includes the Schedule attached thereto which forms an integral part thereof. All references to "Convention" shall be understood as including the said Schedule either in its present terms or as amended in accordance with the provisions of Article V.
2. This Convention applies to factory ships, land stations, and whale catchers under the jurisdiction of the Contracting Governments and to all waters in which whaling is prosecuted by such factory ships, land stations, and whale catchers.

Article II

As used in this Convention:-

1. "Factory ship" means a ship in which or on which whales are treated either wholly or in part;
2. "Land station" means a factory on the land at which whales are treated either wholly or in part;
3. "Whale catcher" means a ship used for the purpose of hunting, taking, towing, holding on to, or scouting for whales;
4. "Contracting Government" means any Government which has deposited an instrument of ratification or has given notice of adherence to this Convention.

Article III

1. The Contracting Governments agree to establish an International Whaling Commission, hereinafter referred to as the Commission, to be composed of one member from each Contracting Government. Each member shall have one vote and may be accompanied by one or more experts and advisers.
2. The Commission shall elect from its own members a Chairman and Vice-Chairman and shall determine its own Rules of Procedure. Decisions of the Commission shall be taken by a simple majority of those members voting except that a three-fourths majority of those members voting shall be required for action in pursuance of Article V. The Rules of Procedure may provide for decisions otherwise than at meetings of the Commission.
3. The Commission may appoint its own Secretary and staff.
4. The Commission may set up, from among its own members and experts or advisers, such committees as it considers desirable to perform such functions as it may authorize.
5. The expenses of each member of the Commission and of his experts and advisers shall be determined and paid by his own Government.
6. Recognizing that specialized agencies related to the United Nations will be concerned with the conservation and development of whale fisheries and the products arising therefrom and desiring to avoid duplication of functions, the Contracting Governments will consult among themselves within two years after the coming into force of this Convention to decide whether the Commission shall be brought within the framework of a specialized agency related to the United Nations.
7. In the meantime the Government of the United Kingdom of Great Britain and Northern Ireland shall arrange, in consultation with the other Contracting Governments, to convene the first meeting of the Commission, and shall initiate the consultation referred to in paragraph 6 above.
8. Subsequent meetings of the Commission shall be convened as the Commission may determine.

Article IV

1. The Commission may either in collaboration with or through independent agencies of the Contracting Governments or other public or private agencies, establishments, or organizations, or independently
   (a) encourage, recommend, or if necessary, organize studies and investigations relating to whales and whaling;
   (b) collect and analyze statistical information concerning the current condition and trend of the whale stocks and the effects of whaling activities thereon;
   (c) study, appraise, and disseminate information concerning methods of maintaining and increasing the populations of whale stocks.
2. The Commission shall arrange for the publication of reports of its activities, and it may publish independently or in collaboration with the International Bureau for Whaling Statistics at Sandefjord in Norway and other organizations and agencies such reports as it deems appropriate, as well as statistical, scientific, and other pertinent information relating to whales and whaling.

Article V

1. The Commission may amend from time to time the provisions of the Schedule by adopting regulations with respect to the conservation and utilization of whale resources, fixing
   (a) protected and unprotected species;
   (b) open and closed seasons;
   (c) open and closed waters, including the designation of sanctuary areas;
   (d) size limits for each species;
   (e) time, methods, and intensity of whaling (including the maximum catch of whales to be taken in any one season);
   (f) types and specifications of gear and apparatus and appliances which may be used;
   (g) methods of measurement; and
   (h) catch returns and other statistical and biological records.
2. These amendments of the Schedule
   (a) shall be such as are necessary to carry out the objectives and purposes of this Convention and to provide for the conservation, development, and optimum utilization of the whale resources;
   (b) shall be based on scientific findings;
   (c) shall not involve restrictions on the number or nationality of factory ships or land stations, nor allocate specific quotas to any factory ship or land station or to any group of factory ships or land stations; and
   (d) shall take into consideration the interests of the consumers of whale products and the whaling industry.
3. Each of such amendments shall become effective with respect to the Contracting Governments ninety days following notification of the amendment by the Commission to each of the Contracting Governments, except that
   (a) if any Government presents to the Commission objection to any amendment prior to the expiration of this ninety-day period, the amendment shall not become effective with respect to any of the Governments for an additional ninety days;
   (b) thereupon, any other Contracting Government may present objection to the amendment at any time prior to the expiration of the additional ninety-day period, or before the expiration of thirty days from the date of receipt of the last objection received during such additional ninety-day period, whichever date shall be the later; and
   (c) thereafter, the amendment shall become effective with respect to all Contracting Governments which have not presented objection but shall not become effective with respect to any Government which has so objected until such date as the objection is withdrawn. The Commission shall notify each Contracting Government immediately upon receipt of each objection and withdrawal and each Contracting Government shall acknowledge receipt of all notifications of amendments, objections, and withdrawals.
4. No amendments shall become effective before 1st July, 1949.

Article VI

The Commission may from time to time make recommendations to any or all Contracting Governments on any matters which relate to whales or whaling and to the objectives and purposes of this Convention.

Article VII

The Contracting Government shall ensure prompt transmission to the International Bureau for Whaling Statistics at Sandefjord in Norway, or to such other body as the Commission may designate, of notifications and statistical and other information required by this Convention in such form and manner as may be prescribed by the Commission.

Article VIII

1. Notwithstanding anything contained in this Convention any Contracting Government may grant to any of its nationals a special permit authorizing that national to kill, take and treat whales for purposes of scientific research subject to such restrictions as to number and subject to such other conditions as the Contracting Government thinks fit, and the killing, taking, and treating of whales in accordance with the provisions of this Article shall be exempt from the operation of this Convention. Each Contracting Government shall report at once to the Commission all such authorizations which it has granted. Each Contracting Government may at any time revoke any such special permit which it has granted.
2. Any whales taken under these special permits shall so far as practicable be processed and the proceeds shall be dealt with in accordance with directions issued by the Government by which the permit was granted.
3. Each Contracting Government shall transmit to such body as may be designated by the Commission, in so far as practicable, and at intervals of not more than one year, scientific information available to that Government with respect to whales and whaling, including the results of research conducted pursuant to paragraph 1 of this Article and to Article IV.
4. Recognizing that continuous collection and analysis of biological data in connection with the operations of factory ships and land stations are indispensable to sound and constructive management of the whale fisheries, the Contracting Governments will take all practicable measures to obtain such data.

Article IX

1. Each Contracting Government shall take appropriate measures to ensure the application of the provisions of this Convention and the punishment of infractions against the said provisions in operations carried out by persons or by vessels under its jurisdiction.
2. No bonus or other remuneration calculated with relation to the results of their work shall be paid to the gunners and crews of whale catchers in respect of any whales the taking of which is forbidden by this Convention.
3. Prosecution for infractions against or contraventions of this Convention shall be instituted by the Government having jurisdiction over the offence.
4. Each Contracting Government shall transmit to the Commission full details of each infraction of the provisions of this Convention by persons or vessels under the jurisdiction of that Government as reported by its inspectors. This information shall include a statement of measures taken for dealing with the infraction and of penalties imposed.

Article X

1. This Convention shall be ratified and the instruments of ratifications shall be deposited with the Government of the United States of America.
2. Any Government which has not signed this Convention may adhere thereto after it enters into force by a notification in writing to the Government of the United States of America.
3. The Government of the United States of America shall inform all other signatory Governments and all adhering Governments of all ratifications deposited and adherences received.
4. This Convention shall, when instruments of ratification have been deposited by at least six signatory Governments, which shall include the Governments of the Netherlands, Norway, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, enter into force with respect to those Governments and shall enter into force with respect to each Government which subsequently ratifies or adheres on the date of the deposit of its instrument of ratification or the receipt of its notification of adherence.
5. The provisions of the Schedule shall not apply prior to 1st July, 1948. Amendments to the Schedule adopted pursuant to Article V shall not apply prior to 1st July, 1949.

Article XI

Any Contracting Government may withdraw from this Convention on 30th June, of any year by giving notice on or before 1st January, of the same year to the depository Government, which upon receipt of such a notice shall at once communicate it to the other Contracting Governments. Any other Contracting Government may, in like manner, within one month of the receipt of a copy of such a notice from the depository Government give notice of withdrawal, so that the Convention shall cease to be in force on 30th June, of the same year with respect to the Government giving such notice of withdrawal.

The Convention shall bear the date on which it is opened for signature and shall remain open for signature for a period of fourteen days thereafter.

In witness whereof the undersigned, being duly authorized, have signed this Convention.

Done in Washington this second day of December, 1946, in the English language, the original of which shall be deposited in the archives of the Government of the United States of America. The Government of the United States of America shall transmit certified copies thereof to all the other signatory and adhering Governments.

Protocol

to the International Convention for the Regulation of Whaling, Signed at Washington Under Date of December 2, 1946

The Contracting Governments to the International Convention for the Regulation of Whaling signed at Washington under date of 2nd December, 1946 which Convention is hereinafter referred to as the 1946 Whaling Convention, desiring to extend the application of that Convention to helicopters and other aircraft and to include provisions on methods of inspection among those Schedule provisions which may be amended by the Commission, agree as follows:

Article I
Subparagraph 3 of the Article II of the 1946 Whaling Convention shall be amended to read as follows:

"3. 'whale catcher' means a helicopter, or other aircraft, or a ship, used for the purpose of hunting, taking, killing, towing, holding on to, or scouting for whales."

Article II
Paragraph 1 of Article V of the 1946 Whaling Convention shall be amended by deleting the word "and" preceding clause (h), substituting a semicolon for the period at the end of the paragraph, and adding the following language: "and (i) methods of inspection".

Article III
1. This Protocol shall be open for signature and ratification or for adherence on behalf of any Contracting Government to the 1946 Whaling Convention.
2. This Protocol shall enter into force on the date upon which instruments of ratification have been deposited with, or written notifications of adherence have been received by, the Government of the United States of America on behalf of all the Contracting Governments to the 1946 Whaling Convention.
3. The Government of the United States of America shall inform all Governments signatory or adhering to the 1946 Whaling Convention of all ratifications deposited and adherences received.
4. This Protocol shall bear the date on which it is opened for signature and shall remain open for signature for a period of fourteen days thereafter, following which period it shall be open for adherence.

IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Protocol.

DONE in Washington this nineteenth day of November, 1956, in the English Language, the original of which shall be deposited in the archives of the Government of the United States of America. The Government of the United States of America shall transmit certified copies thereof to all Governments signatory or adhering to the 1946 Whaling Convention.

International Convention for the Regulation of Whaling, 1946

Schedule

As amended by the Commission at the 65th Meeting

Portorož, Slovenia, September 2014



INTERNATIONAL
WHALING COMMISSION

International Convention for the Regulation of Whaling, 1946 Schedule

EXPLANATORY NOTES

The Schedule printed on the following pages contains the amendments made by the Commission at its 65th Annual Meeting in September 2014. The amendments, which are shown in ***italic bold*** type, came into effect on 4 January 2015.
In Tables 1, 2 and 3 unclassified stocks are indicated by a dash. Other positions in the Tables have been filled with a dot to aid legibility.
Numbered footnotes are integral parts of the Schedule formally adopted by the Commission. Other footnotes are editorial.
The Commission was informed in June 1992 by the ambassador in London that the membership of the Union of Soviet Socialist Republics in the International Convention for the Regulation of Whaling from 1948 is continued by the Russian Federation.
The Commission recorded at its 39th (1987) meeting the fact that references to names of native inhabitants in Schedule paragraph 13(*b*)(4) would be for geographical purposes alone, so as not to be in contravention of Article V.2(c) of the Convention (*Rep. int. Whal. Commn* 38:21).

I. INTERPRETATION

1. The following expressions have the meanings respectively assigned to them, that is to say:

A. Baleen whales

"baleen whale" means any whale which has baleen or whale bone in the mouth, i.e. any whale other than a toothed whale.

"blue whale" (*Balaenoptera musculus*) means any whale known as blue whale, Sibbald's rorqual, or sulphur bottom, and including pygmy blue whale.

"bowhead whale" (*Balaena mysticetus*) means any whale known as bowhead, Arctic right whale, great polar whale, Greenland right whale, Greenland whale.

"Bryde's whale" (*Balaenoptera edeni*, *B. brydei*) means any whale known as Bryde's whale.

"fin whale" (*Balaenoptera physalus*) means any whale known as common finback, common rorqual, fin whale, herring whale, or true fin whale.

"gray whale" (*Eschrichtius robustus*) means any whale known as gray whale, California gray, devil fish, hard head, mussel digger, gray back, or rip sack.

"humpback whale" (*Megaptera novaeangliae*) means any whale known as bunch, humpback, humpback whale, humpbacked whale, hump whale or hunchbacked whale.

"minke whale" (*Balaenoptera acutorostrata*, *B. bonaerensis*) means any whale known as lesser rorqual, little piked whale, minke whale, pike-headed whale or sharp headed finner.

"pygmy right whale" (*Caperea marginata*) means any whale known as southern pygmy right whale or pygmy right whale.

"right whale" (*Eubalaena glacialis*, *E. australis*) means any whale known as Atlantic right whale, Arctic right whale, Biscayan right whale, Nordkaper, North Atlantic right whale, North Cape whale, Pacific right whale, or southern right whale.

"sei whale" (*Balaenoptera borealis*) means any whale known as sei whale, Rudolphi's rorqual, pollack whale, or coalfish whale.

B. Toothed whales

"toothed whale" means any whale which has teeth in the jaws.

"beaked whale" means any whale belonging to the genus Mesoplodon, or any whale known as Cuvier's beaked whale (*Ziphius cavirostris*), or Shepherd's beaked whale (*Tasmacetus shepherdi*).

"bottlenose whale" means any whale known as Baird's beaked whale (*Berardius bairdii*), Arnoux's whale (*Berardius arnuxii*), southern bottlenose whale (*Hyperoodon planifrons*), or northern bottlenose whale (*Hyperoodon ampullatus*).

"killer whale" (*Orcinus orca*) means any whale known as killer whale or orca.

"pilot whale" means any whale known as long-finned pilot whale (*Globicephala melaena*) or short-finned pilot whale (*G. macrorhynchus*).

"sperm whale" (*Physeter macrocephalus*) means any whale known as sperm whale, spermacet whale, cachalot or pot whale.

C. General

"strike" means to penetrate with a weapon used for whaling.

"land" means to retrieve to a factory ship, land station, or other place where a whale can be treated.

"take" means to flag, buoy or make fast to a whale catcher.

"lose" means to either strike or take but not to land.

"dauhval" means any unclaimed dead whale found floating.

"lactating whale" means (a) with respect to baleen whales - a female which has any milk present in a mammary gland, (b) with respect to sperm whales - a female which has milk present in a mammary gland the maximum thickness (depth) of which is 10cm or more. This measurement shall be at the mid ventral point of the mammary gland perpendicular to the body axis, and shall be logged to the nearest centimetre; that is to say, any gland between 9.5cm and 10.5cm shall be logged as 10cm. The measurement of any gland which falls on an exact 0.5 centimetre shall be logged at the next 0.5 centimetre, e.g. 10.5cm shall be logged as 11.0cm.

However, notwithstanding these criteria, a whale shall not be considered a lactating whale if scientific (histological or other biological) evidence is presented to the appropriate national authority establishing that the whale could not at that point in its physical cycle have had a calf dependent on it for milk.

"small-type whaling" means catching operations using powered vessels with mounted harpoon guns hunting exclusively for minke, bottlenose, beaked, pilot or killer whales.

II. SEASONS

Factory Ship Operations

2. (*a*) It is forbidden to use a factory ship or whale catcher attached thereto for the purpose of taking or treating baleen whales except minke whales, in any waters south of 40° South Latitude except during the period from 12th December to 7th April following, both days inclusive.

(*b*) It is forbidden to use a factory ship or whale catcher attached thereto for the purpose of taking or treating sperm or minke whales, except as permitted by the Contracting Governments in accordance with sub-paragraphs (*c*) and (*d*) of this paragraph, and paragraph 5.

(*c*) Each Contracting Government shall declare for all factory ships and whale catchers attached thereto under its jurisdiction, an open season or seasons not to exceed eight months out of any period of twelve months during which the taking or killing of sperm whales by whale catchers may be permitted; provided that a separate open season may be declared for each factory ship and the whale catchers attached thereto.

(*d*) Each Contracting Government shall declare for all factory ships and whale catchers attached thereto under its jurisdiction one continuous open season not to exceed six months out of any period of twelve months during which the taking or killing of minke whales by the whale catchers may be permitted provided that:

(1) a separate open season may be declared for each factory ship and the whale catchers attached thereto;

(2) the open season need not necessarily include the whole or any part of the period declared for other baleen whales pursuant to sub-paragraph (*a*) of this paragraph.

3. It is forbidden to use a factory ship which has been used during a season in any waters south of 40° South Latitude for the purpose of treating baleen whales, except minke whales, in any other area except the North Pacific Ocean and its dependent waters north of the Equator for the same purpose within a period of one year from the termination of that season; provided that catch limits in the North Pacific Ocean and dependent waters are established as provided in paragraphs 12 and 16 of this Schedule and provided that this paragraph shall not apply to a ship which has been used during the season solely for freezing or salting the meat and entrails of whales intended for human food or feeding animals.

Land Station Operations

4. (*a*) It is forbidden to use a whale catcher attached to a land station for the purpose of killing or attempting to kill baleen and sperm whales except as permitted by the Contracting Government in accordance with sub-paragraphs (*b*), (*c*) and (*d*) of this paragraph.

(*b*) Each Contracting Government shall declare for all land stations under its jurisdiction, and whale catchers attached to such land stations, one open season during which the taking or killing of baleen whales, except minke whales, by the whale catchers shall be permitted. Such open season shall be for a period of not more than six consecutive months in any period of twelve months and shall apply to all land stations under the jurisdiction of the Contracting Government; provided that a separate open season may be declared for any land station used for the taking or treating of baleen whales, except minke whales, which is more than 1,000 miles from the nearest land station used for the taking or treating of baleen whales, except minke whales, under the jurisdiction of the same Contracting Government.

(*c*) Each Contracting Government shall declare for all land stations under its jurisdiction and for whale catchers attached to such land stations, one open season not to exceed eight continuous months in any one period of twelve months, during which the taking or killing of sperm whales by the whale catchers shall be permitted; provided that a separate open season may be declared for any land station used for the taking or treating of sperm whales which is more than 1,000 miles from the nearest land station used for the taking or treating of sperm whales under the jurisdiction of the same Contracting Government.

(*d*) Each Contracting Government shall declare for all land stations under its jurisdiction and for whale catchers attached to such land stations one open season not to exceed six continuous months in any period of twelve months during which the taking or killing of minke whales by the whale catchers shall be permitted (such period not being necessarily concurrent with the period declared for other baleen whales, as provided for in sub-paragraph (*b*) of this paragraph); provided that a separate open season may be declared for any land station used for the taking or treating of minke whales which is more than 1,000 miles from the nearest land station used for the taking or treating of minke whales under the jurisdiction of the same Contracting Government.

Except that a separate open season may be declared for any land station used for the taking or treating of minke whales which is located in an area having oceanographic conditions clearly distinguishable from those of the area in which are located the other land stations used for the taking or treating of minke whales under the jurisdiction of the same Contracting Government; but the declaration of a separate open season by virtue of the provisions of this sub-paragraph shall not cause thereby the period of time covering the open seasons declared by the same Contracting Government to exceed nine continuous months of any twelve months.

(*e*) The prohibitions contained in this paragraph shall apply to all land stations as defined in Article II of the Whaling Convention of 1946.

Other Operations

5. Each Contracting Government shall declare for all whale catchers under its jurisdiction not operating in conjunction with a factory ship or land station one continuous open season not to exceed six months out of any period of twelve months during which the taking or killing of minke whales by such whale catchers may be permitted. Notwithstanding this paragraph one continuous open season not to exceed nine months may be implemented so far as Greenland is concerned.

III. CAPTURE

6. The killing for commercial purposes of whales, except minke whales using the cold grenade harpoon shall be forbidden from the beginning of the 1980/81 pelagic and 1981 coastal seasons. The killing for commercial purposes of minke whales using the cold grenade harpoon shall be forbidden from the beginning of the 1982/83 pelagic and the 1983 coastal seasons.*
7. (*a*) In accordance with Article V(1)(*c*) of the Convention, commercial whaling, whether by pelagic operations or from land stations, is prohibited in a region designated as the Indian Ocean Sanctuary. This comprises the waters of the Northern Hemisphere from the coast of Africa to 100°E, including the Red and Arabian Seas and the Gulf of Oman; and the waters of the Southern Hemisphere in the sector from 20°E to 130°E, with the Southern boundary set at 55°S. This prohibition applies irrespective of such catch limits for baleen or toothed whales as may from time to time be determined by the Commission. This prohibition shall be reviewed by the Commission at its Annual Meeting in 2002.☼

   (*b*) In accordance with Article V(1)(*c*) of the Convention, commercial whaling, whether by pelagic operations or from land stations, is prohibited in a region designated as the Southern Ocean Sanctuary. This Sanctuary comprises the waters of the Southern Hemisphere southwards of the following line: starting from 40 degrees S, 50 degrees W; thence due east to 20 degrees E; thence due south to 55 degrees S; thence due east to 130 degrees E; thence due north to 40 degrees S; thence due east to 130 degrees W; thence due south to 60 degrees S; thence due east to 50 degrees W; thence due north to the point of beginning. This prohibition applies irrespective of the conservation status of baleen and toothed whale stocks in this Sanctuary, as may from time to time be determined by the Commission. However, this prohibition shall be reviewed ten years after its initial adoption and at succeeding ten year intervals, and could be revised at such times by the Commission. Nothing in this sub-paragraph is intended to prejudice the special legal and political status of Antarctica.**+

Area Limits for Factory Ships

8. It is forbidden to use a factory ship or whale catcher attached thereto, for the purpose of taking or treating baleen whales, except minke whales, in any of the following areas:
   (*a*) in the waters north of 66°N, except that from 150°E eastwards as far as 140°W, the taking or killing of baleen whales by a factory ship or whale catcher shall be permitted between 66°N and 72°N;
   (*b*) in the Atlantic Ocean and its dependent waters north of 40°S;
   (*c*) in the Pacific Ocean and its dependent waters east of 150°W between 40°S and 35°N;
   (*d*) in the Pacific Ocean and its dependent waters west of 150°W between 40°S and 20°N;
   (*e*) in the Indian Ocean and its dependent waters north of 40°S.

Classification of Areas and Divisions

9. (*a*) *Classification of Areas*
   Areas relating to Southern Hemisphere baleen whales except Bryde's whales are those waters between the ice-edge and the Equator and between the meridians of longitude listed in Table 1.
   (*b*) *Classification of Divisions*
   Divisions relating to Southern Hemisphere sperm whales are those waters between the ice-edge and the Equator and between the meridians of longitude listed in Table 3.
   (*c*) *Geographical boundaries in the North Atlantic*
   The geographical boundaries for the fin, minke and sei whale stocks in the North Atlantic are:

FIN WHALE STOCKS

NOVA SCOTIA
South and West of a line through:
47°N 54°W, 46°N 54°30'W,
46°N 42°W, 20°N 42°W.

NEWFOUNDLAND-LABRADOR
West of a line through:
75°N 73°30'W, 69°N 59°W, 61°N 59°W,
52°20'N 42°W, 46°N 42°W and
North of a line through:
46°N 42°W, 46°N 54°30'W, 47°N 54°W.

WEST GREENLAND
East of a line through:
75°N 73°30'W, 69°N 59°W,
61°N 59°W, 52°20'N 42°W,
and West of a line through
52°20'N 42°W, 59°N 42°W,
59°N 44°W, Kap Farvel.

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*The Governments of Brazil, Iceland, Japan, Norway and the Union of Soviet Socialist Republics lodged objections to the second sentence of paragraph 6 within the prescribed period. For all other Contracting Governments this sentence came into force on 8 March 1982. Norway withdrew its objection on 9 July 1985 and Brazil on 8 January 1992. Iceland withdrew from the Convention with effect from 30 June 1992. The objections of Japan and the Russian Federation not having been withdrawn, this sentence is not binding upon these governments.

☼At its 54th Annual Meeting in 2002, the Commission agreed to continue this prohibition but did not discuss whether or not it should set a time when it should be reviewed again.

**The Government of Japan lodged an objection within the prescribed period to paragraph 7(*b*) to the extent that it applies to the Antarctic minke whale stocks. The Government of the Russian Federation also lodged an objection to paragraph 7(*b*) within the prescribed period but withdrew it on 26 October 1994. For all Contracting Governments except Japan paragraph 7(*b*) came into force on 6 December 1994.

+Paragraph 7(*b*) contains a provision for review of the Southern Ocean Sanctuary "ten years after its initial adoption". Paragraph 7(*b*) was adopted at the 46th (1994) Annual Meeting. Therefore, the first review is due in 2004.

EAST GREENLAND-ICELAND
East of a line through:
Kap Farvel (South Greenland),
59°N 44°W, 59°N 42°W, 20°N 42°W,
and West of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E,
74°N 3°E, and South of 74°N.

NORTH NORWAY
North and East of a line through:
74°N 22°W, 74°N 3°E, 68°N 3°E,
67°N 0°, 67°N 14°E.

WEST NORWAY-FAROE ISLANDS
South of a line through:
67°N 14°E, 67°N 0°, 60°N 18°W,
and North of a line through:
61°N 16°W, 61°N 0°, Thyborøn
(Western entrance to Limfjorden, Denmark).

SPAIN-PORTUGAL-BRITISH ISLES
South of a line through:
Thyborøn (Denmark), 61°N 0°, 61°N 16°W,
and East of a line through:
63°N 11°W, 60°N 18°W, 22°N 18°W.

MINKE WHALE STOCKS
CANADIAN EAST COAST
West of a line through:
75°N 73°30'W, 69°N 59°W, 61°N 59°W,
52°20'N 42°W, 20°N 42°W.

CENTRAL
East of a line through:
Kap Farvel (South Greenland),
59°N 44°W, 59°N 42°W, 20°N 42°W,
and West of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E,
74°N 3°E, and South of 74°N.

WEST GREENLAND
East of a line through:
75°N 73°30'W, 69°N 59°W, 61°N 59°W,
52°20'N 42°W, and
West of a line through:
52°20'N 42°W, 59°N 42°W,
59°N 44°W, Kap Farvel.

NORTHEASTERN
East of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E, 74°N 3°E,
and North of a line through:
74°N 3°E, 74°N 22°W.

SEI WHALE STOCKS
NOVA SCOTIA
South and West of a line through:
47°N 54°W, 46°N 54°30'W, 46°N 42°W,
20°N 42°W.

ICELAND-DENMARK STRAIT
East of a line through:
Kap Farvel (South Greenland),
59°N 44°W, 59°N 42°W, 20°N 42°W,
and West of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E,
74°N 3°E, and South of 74°N.

EASTERN
East of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E, 74°N 3°E,
and North of a line through:
74°N 3°E, 74°N 22°W.

(*d*) *Geographical boundaries in the North Pacific*
The geographical boundaries for the sperm, Bryde's and minke whale stocks in the North Pacific are:

SPERM WHALE STOCKS
WESTERN DIVISION
West of a line from the ice-edge south along the 180° meridian of longitude to 180°, 50°N, then east along the 50°N parallel of latitude to 160°W, 50°N, then south along the 160°W meridian of longitude to 160°W, 40°N, then east along the 40°N parallel of latitude to 150°W, 40°N, then south along the 150°W meridian of longitude to the Equator.

EASTERN DIVISION
East of the line described above.

BRYDE'S WHALE STOCKS
EAST CHINA SEA
West of the Ryukyu Island chain.

EASTERN
East of 160°W (excluding the Peruvian stock area).

WESTERN
West of 160°W (excluding the East China Sea stock area).

MINKE WHALE STOCKS
SEA OF JAPAN-YELLOW SEA-EAST CHINA SEA
West of a line through the Philippine Islands, Taiwan, Ryukyu Islands, Kyushu, Honshu, Hokkaido and Sakhalin Island, north of the Equator.

OKHOTSK SEA-WEST PACIFIC
East of the Sea of Japan-Yellow Sea- East China Sea stock and west of 180°, north of the Equator.

REMAINDER
East of the Okhotsk Sea-West Pacific stock, north of the Equator.

(*e*) *Geographical boundaries for Bryde's whale stocks in the Southern Hemisphere*

SOUTHERN INDIAN OCEAN
20°E to 130°E,
South of the Equator.

SOLOMON ISLANDS
150°E to 170°E,
20°S to the Equator.

PERUVIAN
110°W to the South American coast,
10°S to 10°N.

EASTERN SOUTH PACIFIC
150°W to 70°W,
South of the Equator (excluding the Peruvian stock area).

WESTERN SOUTH PACIFIC
130°E to 150°W,
South of the Equator (excluding the Solomon Islands stock area).

SOUTH ATLANTIC
70°W to 20°E,
South of the Equator (excluding the South African inshore stock area).

SOUTH AFRICAN INSHORE
South African coast west of 27°E and out to the 200 metre isobath.

Classification of Stocks

10. All stocks of whales shall be classified in one of three categories according to the advice of the Scientific Committee as follows:

(*a*) A Sustained Management Stock (SMS) is a stock which is not more than 10 per cent of Maximum Sustainable Yield (hereinafter referred to as MSY) stock level below MSY stock level, and not more than 20 per cent above that level; MSY being determined on the basis of the number of whales.

When a stock has remained at a stable level for a considerable period under a regime of approximately constant catches, it shall be classified as a Sustained Management Stock in the absence of any positive evidence that it should be otherwise classified.

Commercial whaling shall be permitted on Sustained Management Stocks according to the advice of the Scientific Committee. These stocks are listed in Tables 1, 2 and 3 of this Schedule.

For stocks at or above the MSY stock level, the permitted catch shall not exceed 90 per cent of the MSY. For stocks between the MSY stock level and 10 per cent below that level, the permitted catch shall not exceed the number of whales obtained by taking 90 per cent of the MSY and reducing that number by 10 per cent for every 1 per cent by which the stock falls short of the MSY stock level.

(*b*) An Initial Management Stock (IMS) is a stock more than 20 per cent of MSY stock level above MSY stock level. Commercial whaling shall be permitted on Initial Management Stocks according to the advice of the Scientific Committee as to measures necessary to bring the stocks to the MSY stock level and then optimum level in an efficient manner and without risk of reducing them below this level. The permitted catch for such stocks will not be more than 90 per cent of MSY as far as this is known, or, where it will be more appropriate, catching effort shall be limited to that which will take 90 per cent of MSY in a stock at MSY stock level.

In the absence of any positive evidence that a continuing higher percentage will not reduce the stock below the MSY stock level no more than 5 per cent of the estimated initial exploitable stock shall be taken in any one year. Exploitation should not commence until an estimate of stock size has been obtained which is satisfactory in the view of the Scientific Committee. Stocks classified as Initial Management Stock are listed in Tables 1, 2 and 3 of this Schedule.

(*c*) A Protection Stock (PS) is a stock which is below 10 per cent of MSY stock level below MSY stock level.

There shall be no commercial whaling on Protection Stocks. Stocks so classified are listed in Tables 1, 2 and 3 of this Schedule.

(*d*) Notwithstanding the other provisions of paragraph 10 there shall be a moratorium on the taking, killing or treating of whales, except minke whales, by factory ships or whale catchers attached to factory ships. This moratorium applies to sperm whales, killer whales and baleen whales, except minke whales.

(*e*) Notwithstanding the other provisions of paragraph 10, catch limits for the killing for commercial purposes of whales from all stocks for the 1986 coastal and the 1985/86 pelagic seasons and thereafter shall be zero. This provision will be kept under review, based upon the best scientific advice, and by 1990 at the latest the Commission will undertake a comprehensive assessment of the effects of this decision on whale stocks and consider modification of this provision and the establishment of other catch limits.*•#

*The Governments of Japan, Norway, Peru and the Union of Soviet Socialist Republics lodged objection to paragraph 10(*e*) within the prescribed period. For all other Contracting Governments this paragraph came into force on 3 February 1983. Peru withdrew its objection on 22 July 1983. The Government of Japan withdrew its objections with effect from 1 May 1987 with respect to commercial pelagic whaling; from 1 October 1987 with respect to commercial coastal whaling for minke and Bryde's whales; and from 1 April 1988 with respect to commercial coastal sperm whaling. The objections of Norway and the Russian Federation not having been withdrawn, the paragraph is not binding upon these Governments.

•Iceland's instrument of adherence to the International Convention for the Regulation of Whaling and the Protocol to the Convention deposited on 10 October 2002 states that Iceland 'adheres to the aforesaid Convention and Protocol with a reservation with respect to paragraph 10(*e*) of the Schedule attached to the Convention'. The instrument further states the following:

> 'Notwithstanding this, the Government of Iceland will not authorise whaling for commercial purposes by Icelandic vessels before 2006 and, thereafter, will not authorise such whaling while progress is being made in negotiations within the IWC on the RMS. This does not apply, however, in case of the so-called moratorium on whaling for commercial purposes, contained in paragraph 10(*e*) of the Schedule not being lifted within a reasonable time after the completion of the RMS. Under no circumstances will whaling for commercial purposes be authorised without a sound scientific basis and an effective management and enforcement scheme.'

#The Governments of Argentina, Australia, Brazil, Chile, Finland, France, Germany, Italy, Mexico, Monaco, the Netherlands, New Zealand, Peru, San Marino, Spain, Sweden, UK and the USA have lodged objections to Iceland's reservation to paragraph 10(*e*).

Table 1

BALEEN WHALE STOCK CLASSIFICATIONS AND CATCH LIMITS[+] (excluding Bryde's whales).

		SEI		MINKE		FIN		BLUE		RIGHT, BOWHEAD, HUMPBACK		PYGMY RIGHT		GRAY	
		Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit
SOUTHERN HEMISPHERE-***2014/2015*** pelagic season and ***2015*** coastal season▲															
Area															.
I	120°W-60°W	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
II	60°W- 0°	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
III	0°- 70°E	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
IV	70°E-130°E	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
V	130°E- 170°W	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
VI	170°W-120°W	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
Total catch not to exceed:							0		0		0		0		
NORTHERN HEMISPHERE-***2015*** season▲															
ARCTIC		.	.	.	.	.	.	.	.	.	.	PS	0	.	.
NORTH PACIFIC															
Whole region		PS	0	.	.	PS	0	PS	0	PS	0	PS	0	.	.
Okhotsk Sea-West Pacific Stock		.	.	-	0	.	.	.	.	.	.	.	.	.	.
Sea of Japan-Yellow Sea-East China Sea Stock		.	.	PS	0	.	.	.	.	.	.	.	.	.	.
Remainder		.	.	IMS	0	.	.	.	.	.	.	.	.	.	.
Eastern Stock		.	.	.	.	.	.	.	.	.	.	.	.	SMS	.[1]
Western Stock		.	.	.	.	.	.	.	.	.	.	.	.	PS	0
NORTH ATLANTIC															
Whole region		.	.	.	.	.	.	PS	0	PS	0	PS	0	.	.
West Greenland Stock		.	.	PS	0	-	19[2]	.	.	.	.	.	.	.	.
Newfoundland-Labrador Stock		.	.	.	.	-	0	.	.	.	.	.	.	.	.
Canadian East Coast Stock		.	.	-	0	.	.	.	.	.	.	.	.	.	.
Nova Scotia Stock		PS	0	.	.	PS	0	.	.	.	.	.	.	.	.
Central Stock		.	.	-	.	.	.	.	.	.	.	.	.	.	.
East Greenland-Iceland Stock		.	.	.	.	SMS	0	.	.	.	.	.	.	.	.
Iceland-Denmark Strait Stock		-	0	.	.	.	.	.	.	.	.	.	.	.	.
Spain-Portugal-British Isles Stock		.	.	.	.	-	0	.	.	.	.	.	.	.	.
Northeastern Stock		.	.	PS*	0	.	.	.	.	.	.	.	.	.	.
West Norway-Faroe Islands Stock		.	.	.	.	PS	0	.	.	.	.	.	.	.	.
North Norway Stock		.	.	.	.	-	0	.	.	.	.	.	.	.	.
Eastern Stock		-	0	.	.	.	.	.	.	.	.	.	.	.	.
NORTHERN INDIAN OCEAN		.	.	IMS	0	.	.	PS	0	PS	0	PS	0	.	.

[1]Available to be taken by aborigines or a Contracting Government on behalf of aborigines pursuant to paragraph 13*(b)*2.

[2]Available to be struck by aborigines pursuant to paragraph 13*(b)*3. Catch limit for each of the years ***2015, 2016, 2017*** and ***2018***.

[+]The catch limits of zero introduced into Table 1 as editorial amendments as a result of the coming into effect of paragraph 10*(e)* are not binding upon the governments of the countries which lodged and have not withdrawn objections to the said paragraph.

*The Government of Norway presented objection to the classification of the Northeastern Atlantic stock of minke whales as a Protection Stock within the prescribed period. This classification came into force on 30 January 1986 but is not binding on the Government of Norway.

▲The Government of the Czech Republic lodged an objection within the prescribed period to the amendments to the Schedule arising from the 64th Annual Meeting of the Commission. These amendments related to the establishment of Aboriginal Subsistence Whaling catch numbers for the period 2013-2018 in paragraph 13(*b*) subparagraphs (1), (2) and (4) and amendments to the dates of the coastal whaling seasons given in paragraphs 11 and 12 and Tables 1, 2 and 3. For all other Contracting Governments, these provisions came into force on 4 February 2013. The Czech Republic lodged similar objections to the Schedule amendments arising from the 60th, 61st, 62nd and 63rd Annual Meetings of the Commission. These objections to the amendments of the 60th, 61st and 62nd meetings were withdrawn by the Government of the Czech Republic on 8 June 2011.

Table 2

Bryde's whale stock classifications and catch limits.[+]

	Classification	Catch limit
SOUTHERN HEMISPHERE-***2014/2015*** pelagic season and ***2015*** coastal season[▲]		
South Atlantic Stock	-	0
Southern Indian Ocean Stock	IMS	0
South African Inshore Stock	-	0
Solomon Islands Stock	IMS	0
Western South Pacific Stock	IMS	0
Eastern South Pacific Stock	IMS	0
Peruvian Stock	-	0
NORTH PACIFIC-***2015*** season[▲]		
Eastern Stock	IMS	0
Western Stock	IMS	0
East China Sea Stock	PS	0
NORTH ATLANTIC-***2015*** season[▲]	IMS	0
NORTHERN INDIAN OCEAN-***2015*** season[▲]	-	0

[+]The catch limits of zero introduced in Table 2 as editorial amendments as a result of the coming into effect of paragraph 10*(e)* are not binding upon the governments of the countries which lodged and have not withdrawn objections to the said paragraph.
[▲]See footnote to Table 1.

Table 3

Toothed whale stock classifications and catch limits.[+]

SOUTHERN HEMISPHERE-***2014/2015*** pelagic season and ***2015*** coastal season[▲]

		SPERM	
Division	Longitudes	Classification	Catch limit
1	60°W-30°W	-	0
2	30°W-20°E	-	0
3	20°E-60°E	-	0
4	60°E-90°E	-	0
5	90°-130°E	-	0
6	130°E-160°E	-	0
7	160°E-170°W	-	0
8	170°W-100°W	-	0
9	100°W-60°W	-	0
NORTHERN HEMISPHERE-***2015*** season[▲]			
NORTH PACIFIC			
Western Division		PS	0[1]
Eastern Division		-	0
NORTH ATLANTIC		-	0
NORTHERN INDIAN OCEAN		-	0
		BOTTLENOSE	
NORTH ATLANTIC		PS	0

[1]No whales may be taken from this stock until catch limits including any limitations on size and sex are established by the Commission.
[+]The catch limits of zero introduced in Table 3 as editorial amendments as a result of the coming into effect of paragraph 10*(e)* are not binding upon the governments of the countries which lodged and have not withdrawn objections to the said paragraph.
[▲]See footnote to Table 1.

Baleen Whale Catch Limits

11. The number of baleen whales taken in the Southern Hemisphere in the ***2014/2015*** pelagic season and the ***2015*** coastal season shall not exceed the limits shown in Tables 1 and 2.▲

12. The number of baleen whales taken in the North Pacific Ocean and dependent waters in ***2015*** and in the North Atlantic Ocean in ***2015*** shall not exceed the limits shown in Tables 1 and 2.▲

13. (*a*) Notwithstanding the provisions of paragraph 10, catch limits for aboriginal subsistence whaling to satisfy aboriginal subsistence need for the 1984 whaling season and each whaling season thereafter shall be established in accordance with the following principles:
    (1) For stocks at or above MSY level, aboriginal subsistence catches shall be permitted so long as total removals do not exceed 90 per cent of MSY.
    (2) For stocks below the MSY level but above a certain minimum level, aboriginal subsistence catches shall be permitted so long as they are set at levels which will allow whale stocks to move to the MSY level.[1]
    (3) The above provisions will be kept under review, based upon the best scientific advice, and by 1990 at the latest the Commission will undertake a comprehensive assessment of the effects of these provisions on whale stocks and consider modification.
    (4) For aboriginal whaling conducted under subparagraphs (*b*)(1), (*b*)(2), and (*b*)(3) of this paragraph, it is forbidden to strike, take or kill calves or any whale accompanied by a calf. For aboriginal whaling conducted under subparagraphs (*b*)(4) of this paragraph, it is forbidden to strike, take or kill suckling calves or female whales accompanied by calves.
    (5) All aboriginal whaling shall be conducted under national legislation that accords with this paragraph.

    (*b*) Catch limits for aboriginal subsistence whaling are as follows:
    (1) The taking of bowhead whales from the Bering-Chukchi-Beaufort Seas stock by aborigines is permitted, but only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines and further provided that:
        (i) For the years 2013, 2014, 2015, 2016 2017 and 2018, the number of bowhead whales landed shall not exceed 336. For each of these years the number of bowhead whales struck shall not exceed 67, except that any unused portion of a strike quota from any year (including 15 unused strikes from the 2008-2012 quota) shall be carried forward and added to the strike quotas of any subsequent years, provided that no more than 15 strikes shall be added to the strike quota for any one year.▲
        (ii) This provision shall be reviewed annually by the Commission in light of the advice of the Scientific Committee.
    (2) The taking of gray whales from the Eastern stock in the North Pacific is permitted, but only by aborigines or a Contracting Government on behalf of aborigines, and then only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines.
        (i) For the years ***2***013, 2014, 2015, 2016, 2017 and 2018, the number of gray whales taken in accordance with this sub-paragraph shall not exceed 744, provided that the number of gray whales taken in any one of the years 2013, 2014, 2015, 2016, 2017 and 2018 shall not exceed 140.▲
        (ii) This provision shall be reviewed annually by the Commission in light of the advice of the Scientific Committee.
    (3) The taking by aborigines of minke whales from the West Greenland and Central stocks and fin whales from the West Greenland stock and bowhead whales from the West Greenland feeding aggregation and humpback whales from the West Greenland feeding aggregation is permitted and then only when the meat and products are to be used exclusively for local consumption.
        (i) The number of fin whales struck from the West Greenland stock in accordance with this sub-paragraph shall not exceed 16 in each of the years ***2015, 2016, 2017*** and ***2018***.[§§]
        (ii) The number of minke whales struck from the Central stock in accordance with this sub-paragraph shall not exceed 12 in each of the years ***2015, 2016, 2017*** and ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the quota of any subsequent years, provided that no more than 3 shall be added to the quota for any one year.[§]
        (iii) The number of minke whales struck from the West Greenland stock shall not exceed ***164*** in each of the years ***2015, 2016, 2017*** and ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the strike quota of any of the subsequent years, provided

▲See footnote to Table 1.

[1]The Commission, on advice of the Scientific Committee, shall establish as far as possible (a) a minimum stock level for each stock below which whales shall not be taken, and (b) a rate of increase towards the MSY level for each stock. The Scientific Committee shall advise on a minimum stock level and on a range of rates of increase towards the MSY level under different catch regimes.

[§]~~At IWC/62 in Agadir, Morocco, June 2010, Denmark and Greenland agreed to voluntarily reduce further the catch limit for the West Greenland stock of fin whales from 16 to 10 for each of the years 2010, 2011 and 2012.~~

[§]~~At the Commission's 64th Annual Meeting held in 2012 a proposal by Denmark (document number IWC/64/12) regarding the Greenland Aboriginal Subsistence Whaling hunts for the period 2013 to 2018 failed to gain the necessary three-quarters majority support.~~

that no more than 15 strikes shall be added to the strike quota for any one year. This provision will be reviewed if new scientific data become available within the ***4*** year period and if necessary amended on basis of the advice of the Scientific Committee.[$]

(iv) The number of bowhead whales struck off West Greenland in accordance with this sub-paragraph shall not exceed 2 in each of the years ***2015, 2016, 2017*** and ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the quota of any subsequent years, provided that no more than 2 shall be added to the quota for any one year. This provision will be reviewed if new scientific data become available within the ***4*** year period and if necessary amended on basis of the advice of the Scientific Committee.[$]

(v) The number of humpback whales struck off West Greenland in accordance with this sub-paragraph shall not exceed ***10*** in each of the years ***2015, 2016, 2017*** and ***2018***, except that any unused portion of the quota for each year shall be carried forward from that year and added to the strike quota of any of the subsequent years, provided that no more than 2 strikes shall be added to the strike quota for any one year. This provision will be reviewed if new scientific data become available within the remaining quota period and if necessary amended on the basis of the advice of the Scientific Committee.[$]

(4) For the seasons 2013-2018 the number of humpback whales to be taken by the Bequians of St. Vincent and The Grenadines shall not exceed 24. The meat and products of such whales are to be used exclusively for local consumption in St. Vincent and The Grenadines.[▲]

14. It is forbidden to take or kill suckling calves or female whales accompanied by calves.

Baleen Whale Size Limits

15. (*a*) It is forbidden to take or kill any sei or Bryde's whales below 40 feet (12.2 metres) in length except that sei and Bryde's whales of not less than 35 feet (10.7 metres) may be taken for delivery to land stations, provided that the meat of such whales is to be used for local consumption as human or animal food.

(*b*) It is forbidden to take or kill any fin whales below 57 feet (17.4 metres) in length in the Southern Hemisphere, and it is forbidden to take or kill fin whales below 55 feet (16.8 metres) in the Northern Hemisphere; except that fin whales of not less than 55 feet (16.8 metres) may be taken in the Southern Hemisphere for delivery to land stations and fin whales of not less than 50 feet (15.2 metres) may be taken in the Northern Hemisphere for delivery to land stations, provided that, in each case the meat of such whales is to be used for local consumption as human or animal food.

Sperm Whale Catch Limits

16. Catch limits for sperm whales of both sexes shall be set at zero in the Southern Hemisphere for the 1981/82 pelagic season and 1982 coastal seasons and following seasons, and at zero in the Northern Hemisphere for the 1982 and following coastal seasons; except that the catch limits for the 1982 coastal season and following seasons in the Western Division of the North Pacific shall remain undetermined and subject to decision by the Commission following special or annual meetings of the Scientific Committee. These limits shall remain in force until such time as the Commission, on the basis of the scientific information which will be reviewed annually, decides otherwise in accordance with the procedures followed at that time by the Commission.
17. It is forbidden to take or kill suckling calves or female whales accompanied by calves.

Sperm Whale Size Limits

18. (*a*) It is forbidden to take or kill any sperm whales below 30 feet (9.2 metres) in length except in the North Atlantic Ocean where it is forbidden to take or kill any sperm whales below 35 feet (10.7 metres).

(*b*) It is forbidden to take or kill any sperm whale over 45 feet (13.7 metres) in length in the Southern Hemisphere north of 40° South Latitude during the months of October to January inclusive.

(*c*) It is forbidden to take or kill any sperm whale over 45 feet (13.7 metres) in length in the North Pacific Ocean and dependent waters south of 40° North Latitude during the months of March to June inclusive.

IV. TREATMENT

19. (*a*) It is forbidden to use a factory ship or a land station for the purpose of treating any whales which are classified as Protection Stocks in paragraph 10 or are taken in contravention of paragraphs 2, 3, 4, 5, 6, 7, 8, 11, 12, 14, 16 and 17 of this Schedule, whether or not taken by whale catchers under the jurisdiction of a Contracting Government.

(*b*) All other whales taken, except minke whales, shall be delivered to the factory ship or land station and all parts of such whales shall be processed by boiling or otherwise, except the internal organs, whale bone and flippers of all whales, the meat of sperm whales and parts of whales intended for human food or feeding animals. A Contracting Government may in less developed regions exceptionally permit treating of whales without use of land stations, provided that such whales are fully utilised in accordance with this paragraph.

(*c*) Complete treatment of the carcases of "dauhval" and of whales used as fenders will not be required in cases where the meat or bone of such whales is in bad condition.

[▲] See footnote to Table 1.

[$] ~~At the Commission's 64th Annual Meeting held in 2012 a proposal by Denmark (document number IWC/64/12) regarding the Greenland Aboriginal Subsistence Whaling hunts for the period 2013 to 2018 failed to gain the necessary three-quarters majority support.~~

20. (*a*) The taking of whales for treatment by a factory ship shall be so regulated or restricted by the master or person in charge of the factory ship that no whale carcase (except of a whale used as a fender, which shall be processed as soon as is reasonably practicable) shall remain in the sea for a longer period than thirty-three hours from the time of killing to the time when it is hauled up for treatment.

(*b*) Whales taken by all whale catchers, whether for factory ships or land stations, shall be clearly marked so as to identify the catcher and to indicate the order of catching.

V. SUPERVISION AND CONTROL

21. (*a*) There shall be maintained on each factory ship at least two inspectors of whaling for the purpose of maintaining twenty-four hour inspection provided that at least one such inspector shall be maintained on each catcher functioning as a factory ship. These inspectors shall be appointed and paid by the Government having jurisdiction over the factory ship; provided that inspectors need not be appointed to ships which, apart from the storage of products, are used during the season solely for freezing or salting the meat and entrails of whales intended for human food or feeding animals.

(*b*) Adequate inspection shall be maintained at each land station. The inspectors serving at each land station shall be appointed and paid by the Government having jurisdiction over the land station.

(*c*) There shall be received such observers as the member countries may arrange to place on factory ships and land stations or groups of land stations of other member countries. The observers shall be appointed by the Commission acting through its Secretary and paid by the Government nominating them.

22. Gunners and crews of factory ships, land stations, and whale catchers, shall be engaged on such terms that their remuneration shall depend to a considerable extent upon such factors as the species, size and yield of whales and not merely upon the number of the whales taken. No bonus or other remuneration shall be paid to the gunners or crews of whale catchers in respect of the taking of lactating whales.

23. Whales must be measured when at rest on deck or platform after the hauling out wire and grasping device have been released, by means of a tape-measure made of a non-stretching material. The zero end of the tape-measure shall be attached to a spike or stable device to be positioned on the deck or platform abreast of one end of the whale. Alternatively the spike may be stuck into the tail fluke abreast of the apex of the notch. The tape-measure shall be held taut in a straight line parallel to the deck and the whale's body, and other than in exceptional circumstances along the whale's back, and read abreast of the other end of the whale. The ends of the whale for measurement purposes shall be the tip of the upper jaw, or in sperm whales the most forward part of the head, and the apex of the notch between the tail flukes.

Measurements shall be logged to the nearest foot or 0.1 metre. That is to say, any whale between 75 feet 6 inches and 76 feet 6 inches shall be logged as 76 feet, and any whale between 76 feet 6 inches and 77 feet 6 inches shall be logged as 77 feet. Similarly, any whale between 10.15 metres and 10.25 metres shall be logged as 10.2 metres, and any whale between 10.25 metres and 10.35 metres shall be logged as 10.3 metres. The measurement of any whale which falls on an exact half foot or 0.05 metre shall be logged at the next half foot or 0.05 metre, e.g. 76 feet 6 inches precisely shall be logged as 77 feet and 10.25 metres precisely shall be logged as 10.3 metres.

VI. INFORMATION REQUIRED

24. (*a*) All whale catchers operating in conjunction with a factory ship shall report by radio to the factory ship:
    (1) the time when each whale is taken
    (2) its species, and
    (3) its marking effected pursuant to paragraph 20(*b*).

(*b*) The information specified in sub-paragraph (*a*) of this paragraph shall be entered immediately by a factory ship in a permanent record which shall be available at all times for examination by the whaling inspectors; and in addition there shall be entered in such permanent record the following information as soon as it becomes available:
    (1) time of hauling up for treatment
    (2) length, measured pursuant to paragraph 23
    (3) sex
    (4) if female, whether lactating
    (5) length and sex of foetus, if present, and
    (6) a full explanation of each infraction.

(*c*) A record similar to that described in sub-paragraph (*b*) of this paragraph shall be maintained by land stations, and all of the information mentioned in the said sub-paragraph shall be entered therein as soon as available.

(*d*) A record similar to that described in sub-paragraph (*b*) of this paragraph shall be maintained by "small-type whaling" operations conducted from shore or by pelagic fleets, and all of this information mentioned in the said sub-paragraph shall be entered therein as soon as available.

25. (*a*) All Contracting Governments shall report to the Commission for all whale catchers operating in conjunction with factory ships and land stations the following information:
    (1) methods used to kill each whale, other than a harpoon, and in particular compressed air;
    (2) number of whales struck but lost.

(*b*) A record similar to that described in sub-paragraph (*a*) of this paragraph shall be maintained by vessels engaged in "small-type whaling" operations and by native peoples taking species listed in paragraph 1, and all the information mentioned in the said sub-paragraph shall be entered therein as soon as available, and forwarded by Contracting Governments to the Commission.

26. (*a*) Notification shall be given in accordance with the provisions of Article VII of the Convention, within two days after the end of each calendar week, of data on the number of baleen whales

by species taken in any waters south of 40° South Latitude by all factory ships or whale catchers attached thereto under the jurisdiction of each Contracting Government, provided that when the number of each of these species taken is deemed by the Secretary to the International Whaling Commission to have reached 85 per cent of whatever total catch limit is imposed by the Commission notification shall be given as aforesaid at the end of each day of data on the number of each of these species taken.

(*b*) If it appears that the maximum catches of whales permitted by paragraph 11 may be reached before 7 April of any year, the Secretary to the International Whaling Commission shall determine, on the basis of the data provided, the date on which the maximum catch of each of these species shall be deemed to have been reached and shall notify the master of each factory ship and each Contracting Government of that date not less than four days in advance thereof. The taking or attempting to take baleen whales, so notified, by factory ships or whale catchers attached thereto shall be illegal in any waters south of 40° South Latitude after midnight of the date so determined.

(*c*) Notification shall be given in accordance with the provisions of Article VII of the Convention of each factory ship intending to engage in whaling operations in any waters south of 40° South Latitude.

27. Notification shall be given in accordance with the provisions of Article VII of the Convention with regard to all factory ships and catcher ships of the following statistical information:
    (*a*) concerning the number of whales of each species taken, the number thereof lost, and the number treated at each factory ship or land station, and
    (*b*) as to the aggregate amounts of oil of each grade and quantities of meal, fertiliser (guano), and other products derived from them, together with
    (*c*) particulars with respect to each whale treated in the factory ship, land station or "small-type whaling" operations as to the date and approximate latitude and longitude of taking, the species and sex of the whale, its length and, if it contains a foetus, the length and sex, if ascertainable, of the foetus.

    The data referred to in (*a*) and (*c*) above shall be verified at the time of the tally and there shall also be notification to the Commission of any information which may be collected or obtained concerning the calving grounds and migration of whales.

28. (*a*) Notification shall be given in accordance with the provisions of Article VII of the Convention with regard to all factory ships and catcher ships of the following statistical information:
        (1) the name and gross tonnage of each factory ship,
        (2) for each catcher ship attached to a factory ship or land station:
            (i) the dates on which each is commissioned and ceases whaling for the season,
            (ii) the number of days on which each is at sea on the whaling grounds each season,
            (iii) the gross tonnage, horsepower, length and other characteristics of each; vessels used only as tow boats should be specified.
        (3) A list of the land stations which were in operation during the period concerned, and the number of miles searched per day by aircraft, if any.

    (*b*) The information required under paragraph (*a*)(2)(iii) should also be recorded together with the following information, in the log book format shown in Appendix A, and forwarded to the Commission:
        (1) where possible the time spent each day on different components of the catching operation,
        (2) any modifications of the measures in paragraphs (*a*)(2)(i)-(iii) or (*b*)(1) or data from other suitable indicators of fishing effort for "small-type whaling" operations.

29. (*a*) Where possible all factory ships and land stations shall collect from each whale taken and report on:
        (1) both ovaries or the combined weight of both testes,
        (2) at least one ear plug, or one tooth (preferably first mandibular).

    (*b*) Where possible similar collections to those described in sub-paragraph (*a*) of this paragraph shall be undertaken and reported by "small-type whaling" operations conducted from shore or by pelagic fleets.

    (*c*) All specimens collected under sub-paragraphs (*a*) and (*b*) shall be properly labelled with platform or other identification number of the whale and be appropriately preserved.

    (*d*) Contracting Governments shall arrange for the analysis as soon as possible of the tissue samples and specimens collected under sub-paragraphs (*a*) and (*b*) and report to the Commission on the results of such analyses.

30. A Contracting Government shall provide the Secretary to the International Whaling Commission with proposed scientific permits before they are issued and in sufficient time to allow the Scientific Committee to review and comment on them. The proposed permits should specify:
    (*a*) objectives of the research;
    (*b*) number, sex, size and stock of the animals to be taken;
    (*c*) opportunities for participation in the research by scientists of other nations; and
    (*d*) possible effect on conservation of stock.

    Proposed permits shall be reviewed and commented on by the Scientific Committee at Annual Meetings when possible. When permits would be granted prior to the next Annual Meeting, the Secretary shall send the proposed permits to members of the Scientific Committee by mail for their comment and review. Preliminary results of any research resulting from the permits should be made available at the next Annual Meeting of the Scientific Committee.

31. A Contracting Government shall transmit to the Commission copies of all its official laws and regulations relating to whales and whaling and changes in such laws and regulations.

INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING, 1946
SCHEDULE APPENDIX A

TITLE PAGE
(one logbook per catcher per season)

Catcher name…… Year built……

Attached to expedition/land station ……

Season……

Overall length…… Wooden/steel hull……

Gross tonnage……

Type of engine..…… H.P. ……

Maximum speed…… Average searching speed……

Asdic set, make and model no.……

Date of installation……

Make and size of cannon……

Type of first harpoon used…… Explosive/electric/non-explosive

Type of killer harpoon used……

Length and type of forerunner……

Type of whaleline……

Height of barrel above sea level……

Speedboat used, Yes/No

Name of Captain……

Number of years experience……

Name of gunner……

Number of years experience……

Number of crew……

INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING, 1946

DAILY RECORD SHEET TABLE 1

Date ……..... Catcher name .....……..... Sheet No.....…….....……

Searching:	Time started (or resumed) searching	.....	.....	.....	.....	.....
	*Time whales seen or reported to catcher	.....	.....	.....	.....	.....
	Whale species	.....	.....	.....	.....	.....
	Number seen and no. of groups	.....	.....	.....	.....	.....
	Position found	.....	.....	.....	.....	.....
	Name of catcher that found whales	.....	.....	.....	.....	.....
Chasing:	Time started chasing (or confirmed whales)	.....	.....	.....	.....	.....
	Time whale shot or chasing discontinued	.....	.....	.....	.....	.....
	Asdic used (Yes/No)	.....	.....	.....	.....	.....
Handling:	Time whale flagged or alongside for towing	.....	.....	.....	.....	.....
	Serial No. of catch	.....	.....	.....	.....	.....
Towing:	Time started picking up	.....	.....	.....	.....	.....
	Time finished picking up or started towing	.....	.....	.....	.....	.....
	Date and time delivered to factory	.....	.....	.....	.....	.....
Resting:	Time stopped (for drifting or resting)	.....	.....	.....	.....	.....
	Time finished drifting/resting	.....	.....	.....	.....	.....
	Time ceased operations	.....	.....	.....	.....	.....

WEATHER CONDITIONS

	Time	Sea state	Wind force and direction	Visibility
Total searching time.....……				
Total chasing time ……				
A) with asdic ……..				
B) without asdic ……..	.....	.....	.....…	……
Total handling time ……				
Total towing time ……	.....	.....	.....…	……
Total resting time ……				
Other time (e.g. bunkering, in port) ……	.....…	……..	.....	.....

Whales Seen (No. and No. of schools)

Blue.....	Bryde's .....….
Fin.....	Minke .....…
Humpback.....	Sperm .....…..
Right.....	Others (specify) .....…..
Sei.....	.....…….....
Signed.....	.....…….....

*Time whales reported to catcher means the time when the catcher is told of the position of a school and starts to move towards it to chase it.

SCHEDULE APPENDIX A

SCHOOLING REPORT TABLE 2

To be completed by pelagic expedition or coastal station for each sperm whale school chased. A separate form to be used each day.

Name of expedition or coastal station .....……

Date ..... Noon position of factory ship .....……

Time School Found .....……

Total Number of Whales in School .....……

Number of Takeable Whales in School .....……

Number of Whales Caught from School by each Catcher .....……

Name of Catcher .....……

Name of Catcher .....……

Name of Catcher .....……

Name of Catcher .....……

Total Number Caught from School .....……

Remarks:

Explanatory Notes

A. Fill in one column for each school chased with number of whales caught by each catcher taking part in the chase; if catchers chase the school but do not catch from it, enter 0; for catchers in fleet which do not chase that school enter X.

B. A school on this form means a group of whales which are sufficiently close together that a catcher having completed handling one whale can start chasing another whale almost immediately without spending time searching. A solitary whale should be entered as a school of 1 whale.

C. A takeable whale is a whale of a size or kind which the catchers would take if possible. It does not necessarily include all whales above legal size, e.g. if catchers are concentrating on large whales only these would be counted as takeable.

D. Information about catchers from other expeditions or companies operating on the same school should be recorded under Remarks.

Rules of Procedure

and

Financial Regulations

As amended by the Commission at the 65th Meeting, September 2014

(amendments are shown in *bold italics*)

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Rules of Procedure

A. Representation

1. A Government party to the International Convention for the Regulation of Whaling, 1946 (hereafter referred to as the Convention) shall have the right to appoint one Commissioner and shall furnish the Secretary of the Commission with the name of its Commissioner and his/her designation and notify the Secretary promptly of any changes in the appointment. The Secretary shall inform other Commissioners of such appointment.
2. In addition to the Commissioner, each Contracting Government is invited to establish an additional means of communication between the Chair and Secretary of the Commission and that Government by designating an Alternate Commissioner or by creating a focal or contact point (which could be an e-mail address). The details shall be communicated to the Secretary through recognised diplomatic channels. Contact details of the Commissioner, Alternate Commissioner or the focal or contact point shall also be posted on the Commission's public web site.
3. ***All Contracting Governments shall furnish the Secretary of the Commission with the contact details of the national office responsible for making payment of financial contributions.***

B. Meetings

1. The Commission shall hold a regular Biennial Meeting in such place as the Commission may determine. Any Contracting Government desiring to extend an invitation to the Commission to meet in that country shall give formal notice two years in advance. A formal offer should include:
   (a) which meetings it covers, i.e. Scientific Committee, Commission sub-groups, Biennial Commission meeting;
   (b) a proposed time window within which the meeting will take place; and
   (c) a timetable for finalising details of the exact timing and location of the meeting.

   Attendance by a majority of the members of the Commission shall constitute a quorum. Special Meetings of the Commission may be called at the direction of the Chair after consultation with the Contracting Governments and Commissioners.
2. Before the end of each Biennial Meeting, the Commission shall decide on: (1) the length of the next Biennial Commission Meeting and associated meetings and (2) which of the Commission's sub-groups need to meet.
3. The Scientific Committee shall meet annually. Other committees and sub-committees shall meet biennially, prior to the meeting of the Commission. However, this does not preclude intersessional work by these committees and sub-groups from continuing.
4. The Bureau shall meet in those years in which the Commission does not meet, and shall otherwise meet as required to fulfil its functions in accordance with Rule M.9. ***The Chair may invite Contracting Governments who are not members of the Bureau, as appropriate, to attend in-person Bureau meetings.***

C. Observers

1. (a) Any Government not a party to the Convention or any intergovernmental organisation may be represented at meetings of the Commission by an observer or observers, if such non-party government or intergovernmental organisation has previously attended any meeting of the Commission, or if it submits its request in writing to the Commission 60 days prior to the start of the meeting, or if the Commission issues an invitation to attend.
   (b) Any non-governmental organisation which expresses an interest in matters covered by the Convention, may be accredited as an observer. Requests for accreditation must be submitted in writing to the Commission 60 days prior to the start of the meeting and the Commission may issue an invitation with respect to such request. Such submissions shall include the standard application form for non-governmental organisations which will be provided by the Secretariat. These applications shall remain available for review by Contracting Governments.

   Once a non-governmental organisation has been accredited through the application process above, it will remain accredited until the Commission decides otherwise.

   Observers from each non-governmental organisation will be allowed seating in the meeting. However, seating limitations may require that the number of observers from each non-governmental organisation be limited. The Secretariat will notify accredited non-governmental organisations of any seating limitations in advance of the meeting.
   (c) The Commission shall levy a registration fee and determine rules of conduct, and may define other conditions for the attendance of observers accredited in accordance with Rule C.1.(a) and (b). The registration fee will cover attendance at the Biennial Commission Meeting to which it relates and any other meeting of the Commission or its subsidiary groups as provided in Rule C.2 in the interval before the next Biennial Commission Meeting.
2. Observers accredited in accordance with Rule C.1.(a) and (b) are admitted to all meetings of the Commission and the Technical Committee, and to any meetings of ***Committees and all*** subsidiary groups of the Commission and the Technical Committee, except the Commissioners-only meetings, meetings of the Bureau and ***closed*** meetings of the Finance and Administration Committee.
3. ***Observers accredited in accordance with rule C.1.(a) and (b) will have speaking rights during Plenary sessions and sessions of Commission subsidiary groups and Committees to which they are admitted to under C.2, in accordance with the Rules of Debate of the Commission. Observers might also submit documents for information to the delegations and observers participating in such sessions, provided these are submitted through the Secretariat at least 48 hours before the session in which they are intended to be made available, and are duly authored or endorsed by the accredited organisation making the submission, which is to be held responsible for its contents.***

D. Credentials

1. (a) The names of all representatives of member and non-member governments and observer organisations to any meeting of the Commission or committees, as specified in the Rules of Procedure of the Commission, Technical and Scientific Committees, shall be notified to the Secretary in writing before their participation and/or attendance at each meeting. For member governments, the notification shall indicate the Commissioner, his/her alternate(s) and advisers, and the head of the national delegation to the Scientific Committee and any alternate(s) as appropriate.

   The written notification shall be made by governments or the heads of organisations as the case may be. In this context, 'governments' means the Head of State, the Head of Government, the Minister of Foreign Affairs (including: on behalf of the Minister of Foreign Affairs), the Minister responsible for whaling or whale conservation (including: on behalf of this Minister), the Head of the Diplomatic Mission accredited to the seat of the Commission or to the host country of the meeting in question, or the Commissioner appointed under Rule A.1.

   (b) Credentials for a Commissioner appointed for the duration of a meeting must be issued as in D.1(a). Thereafter, until the end of the meeting in question, that Commissioner assumes all the powers of a Commissioner appointed under A.1., including that of issuing credentials for his/her delegation.

   (c) In the case of members of delegations who will attend the Biennial Commission Meeting and its associated meetings, the notification may be made *en bloc* by submitting a list of the members who will attend any of these meetings.

   (d) The Secretary, or his/her representative, shall report on the received notifications at the beginning of a meeting.

   (e) In case of any doubt as to the authenticity of notification or in case of apparent delay in their delivery, the Chair of the meeting shall convene an *ad hoc* group of no more than one representative from any Contracting Government present to decide upon the question of participation in the meeting.

E. Decision-making

A decision of the Commission taken at a meeting, whether by consensus or by vote, is not deemed adopted until the text has either been provided to all Members of the Commission, or presented to them by electronic means, and then approved by the Commission. The text will also be made simultaneously available to all other accredited participants. The text shall normally be distributed or presented in English and conveyed in the other working languages by oral interpretation. This rule applies both to decisions of the kinds specified in Rule J, and to other decisions of the Commission, except those relating only to the conduct of the current meeting. If the text of a proposed decision is amended, the revised text shall be distributed or presented in accordance with this rule. The authentic text of any such decision shall be the English version.

The Commission shall make every effort to reach its decisions by consensus. If all efforts to reach consensus have been exhausted and no agreement reached, the following Rules of Procedure shall apply:

1. Each Commissioner shall have the right to vote at Plenary Meetngs of the Commission and in his/her absence his/her deputy or alternate shall have such right. Experts and advisers may address Plenary Meetings of the Commission but shall not be entitled to vote. They may vote at the meetings of any committee to which they have been appointed, provided that when such vote is taken, representatives of any Contracting Government shall only exercise one vote.
2. (a) The right to vote of representatives of any Contracting Government shall be suspended automatically when the annual payment of a Contracting Government including any interest due has not been received by the Commission by the earliest of these dates:
   - 3 months following the due date prescribed in Regulation E.2 of the Financial Regulations; or
   - the day before the first day of the next Biennial or Special Meeting of the Commission if such a meeting is held within 3 months following the due date; or
   - in the case of a vote by postal or other means, the date upon which votes must be received if this falls within 3 months following the due date.

   This suspension of voting rights applies until payment is received by the Commission.

   (b) The Commissioner of a new Contracting Government shall not exercise the right to vote either at meetings or by postal or other means: (i) until 30 days after the date of adherence, although they may participate fully in discussions of the Commission; and (ii) unless the Commission has received the Government's financial contribution or part contribution for the year prescribed in Financial Regulation E.3., the day before the first day of the Biennial or Special Meeting concerned.
3. (a) Where a vote is taken on any matter before the Commission, a simple majority of those casting an affirmative or negative vote shall be decisive, except that a three-fourths majority of those casting an affirmative or negative vote shall be required for action in pursuance of Article V of the Convention.

   (b) Action in pursuance of Article V shall contain the text of the regulations proposed to amend the Schedule. A proposal that does not contain such regulatory text does not constitute an amendment to the Schedule and therefore requires only a simple majority vote. A proposal that does not contain such regulatory text to revise the Schedule but would commit the Commission to amend the Schedule in the future can neither be put to a vote nor adopted.

   (c) At meetings of committees appointed by the Commission, a simple majority of those casting an affirmative or negative vote shall also be decisive. The committee shall report to the Commission if the decision has been arrived at as a result of the vote.

   (d) Votes shall be taken by show of hands, or by roll call, as in the opinion of the Chair, appears to be most suitable. The election of the Chair, Vice-Chair, the appointment of the Secretary of the Commission, and the selection of IWC Biennial Meeting venues shall, upon request by a Commissioner, all proceed by secret ballot.
4. Between meetings of the Commission or in the case of emergency, a vote of the Commissioners may be taken by post, or other means of communication in which case the necessary simple, or where required three-fourths majority, shall be of the total number of Contracting Governments whose right to vote has not been suspended under paragraph 2.

F. Chair

1. The Chair of the Commission shall be elected from time to time from among the Commissioners and shall take office at the conclusion of the Biennial Meeting at which he/she is elected. The Chair shall serve for a period of two years and shall not be eligible for re-election as Chair until a further period of two years has elapsed. The Chair shall, however, remain in office until a successor is elected, if he/she agrees to do so.

   The Chair is to serve the Commission, and as such, shall serve in an individual capacity and not represent the views of their Contracting Government, when acting as Chair.
2. The duties of the Chair shall be:
   (a) to preside at all meetings of the Commission and Bureau;
   (b) to decide all questions of order raised at meetings of the Commission, subject to the right of any Commissioner to appeal against any ruling of the Chair.
   (c) to call for votes and to announce the result of the vote to the Commission;
   (d) to develop, with appropriate consultation, draft agenda for meetings of the Commission and Bureau.
      (i) for Biennial Meetings:
         • in consultation with the Bureau, to develop a draft agenda based on decisions and recommendations made at the previous Biennial Meeting for circulation to all Contracting Governments and Commissioners for review and comment not less than 100 days in advance of the meeting;
         • on the basis of comments and proposals received from Contracting Governments and Commissioners under d(i) above, to develop with the Secretary, an annotated provisional agenda for circulation to all Contracting Governments not less than 60 days in advance of the meeting;
      (ii) for Special Meetings, the two-stage procedure described in (i) above will be followed whenever practicable, recognising that Rule of Procedure J.1 still applies with respect to any item of business involving amendment of the Schedule or recommendations under Article VI of the Convention.
   (e) to sign, on behalf of the Commission, a report of the proceedings of each biennial or other meeting of the Commission and Bureau, for transmission to Contracting Governments and others concerned as an authoritative record of what transpired;
   (f) generally, to make such decisions and give such directions to the Secretary as will ensure, especially in the interval between the meetings of the Commission, that the business of the Commission is carried out efficiently and in accordance with its decision.

G. Vice-Chair

2. The Vice-Chair of the Commission shall be elected from time to time from among the Commissioners and shall preside at meetings of the Commission and Bureau, or between them, in the absence or in the event of the Chair being unable to act. He/she shall on those occasions exercise the powers and duties prescribed for the Chair. The Vice-Chair shall be elected for a period of two years and shall not be eligible for re-election as Vice-Chair until a further period of two years has elapsed. He/she shall, however, remain in office until a successor is elected, if he/she agrees to do so. The Vice-Chair is to serve the Commission, and as such, shall serve in an individual capacity and not represent the views of their Contracting Government, when acting as Vice-Chair.

H. Secretary

1. The Commission shall appoint a Secretary and shall designate staff positions to be filled through appointments made by the Secretary. The Commission shall fix the terms of employment, rate of remuneration including tax assessment and superannuation and travelling expenses for the members of the Secretariat.
2. The Secretary is the executive officer of the Commission and shall:
   (a) be responsible to the Commission for the control and supervision of the staff and management of its office and for the receipt and disbursement of all monies received by the Commission;
   (b) make arrangements for all meetings of the Commission, its committees and the Bureau and provide necessary secretarial assistance;
   (c) prepare and submit to the Chair a draft of the Commission's budget for each two year period and shall subsequently submit the budget to all Contracting Governments and Commissioners as early as possible before the Biennial Meeting;
   (d) despatch by the most expeditious means available:
      (i) a draft agenda for the Biennial Commission Meeting to all Contracting Governments and Commissioners 100 days in advance of the meeting for comment and any additions with annotations they wish to propose;
      (ii) an annotated provisional agenda to all Contracting Governments and Commissioners not less than 60 days in advance of the Biennial Commission Meeting. Included in the annotations should be a brief description of each item, and in so far as possible, documentation relevant to agenda items should be referred to in the annotation and sent to member nations at the earliest possible date;
   (e) receive, tabulate and publish notifications and other information required by the Convention in such form and manner as may be prescribed by the Commission;
   (f) perform such other functions as may be assigned to him/her by the Commission or its Chair;
   (g) where appropriate, provide copies or availability to a copy of reports of the Commission including reports of Observers under the International Observer Scheme, upon request after such reports have been considered by the Commission.
   (h) maintain the Commission's public web site, which shall be continuously accessible to the extent possible subject to maintenance requirements and technical constraints.

I. Chair of Scientific Committee

1. The Chair of the Scientific Committee may attend meetings of the Commission and Technical Committee in an *ex officio* capacity without vote, at the invitation of the Chair of the Commission or Technical Committee respectively in order to represent the views of the Scientific Committee.

J. Schedule amendments, recommendations under Article VI and Resolutions

1. No item of business which involves amendment of the Schedule to the Convention, recommendations under Article VI of the Convention, or Resolutions of the Commission, shall be the subject of decisive action by the Commission unless the full draft text has been circulated to the Commissioners at least 60 days in advance of the meeting at which the matter is to be discussed.
2. Notwithstanding the advance notice requirements for draft Resolutions in Rule J.1, at the recommendation of the Chair in consultation with the Bureau, the Commission may decide to consider urgent draft Resolutions which arise after the 60 day deadline where there have been important developments that warrant action in the Commission. The full draft text of any such Resolution must be circulated to all Commissioners prior to the opening of the meeting at which the draft Resolution is to be considered.
3. Notwithstanding Rules J.1 and J.2, the Commission may adopt Resolutions on any matter that may arise during a meeting only when consensus is achieved.

K. Financial

1. The financial year of the Commission shall be from 1st ~~September~~ ***January*** to 31st ~~August~~ ***December*** (Rules of Procedure, Rule K.1).
2. Any request to Contracting Governments for financial contributions shall be accompanied by a statement of the Commission's expenditure for the appropriate year, actual or estimated.
3. Annual payments and other financial contributions by Contracting Governments shall be made payable to the Commission and shall be in pounds sterling.

L. Offices

1. The seat of the Commission shall be located in the United Kingdom.

M. Committees

1. The Commission shall establish a Scientific Committee, a Technical Committee and a Finance and Administration Committee. Commissioners shall notify their desire to be represented on the Scientific, Technical and Finance and Administration Committees 28 days prior to the meetings, and shall designate the approximate size of their delegations.
2. The Chair may constitute such *ad hoc* committees as may be necessary from time to time, with similar arrangements for notification of the numbers of participants as in paragraph 1 above where appropriate. Each committee shall elect its Chair. The Secretary shall furnish appropriate secretarial services to each committee.
3. Sub-committees and working groups may be designated by the Commission to consider technical issues as appropriate, and each will report to the Technical Committee or the plenary session of the Commission as the Commission may decide.
4. (a) The Scientific Committee shall review the current scientific and statistical information with respect to whales and whaling, shall review current scientific research programmes of Governments, other international organisations or of private organisations, shall review the scientific permits and scientific programmes for which Contracting Governments plan to issue scientific permits, ***shall review current and potential threats and shall review current and potential threats and methods to mitigate them in order to maintain cetacean populations at viable levels, shall provide conservation and management advice where appropriate,*** shall consider such additional matters as may be referred to it by the Commission or by the Chair of the Commission, and shall submit reports and recommendations to the Commission.
   (b) Any *ad hoc* committee, sub-committee or working group established to provide scientific advice shall report to the Scientific Committee, which shall review the report of such committee, sub-committee or working group, and, as appropriate, make its own recommendations on the subject matter.
5. The report of the Scientific Committee should be completed and made available to all Commissioners and posted on the Commission's public web site by the opening date of the Biennial Commission Meeting or within 14 days of the conclusion of the Scientific Committee meeting, whichever is the sooner.
6. The Secretary shall be an *ex officio* member of the Scientific Committee without vote.
7. The Technical Committee shall, as directed by the Commission or the Chair of the Commission, prepare reports and make recommendations on:
   (a) Management principles, categories, criteria and definitions, taking into account the recommendations of the Scientific Committee, as a means of helping the Commission to deal with management issues as they arise;
   (b) technical and practical options for implementation of conservation measures based on Scientific Committee advice;
   (c) the implementation of decisions taken by the Comm-ission through Resolutions and through Schedule provisions;
   (d) Commission agenda items assigned to it;
   (e) any other matters.
8. The Finance and Administration Committee shall advise the Commission on expenditure, budgets, scale of contributions, financial regulations, staff questions, and such other matters as the Commission may refer to it from time to time. ***The Chair of the Finance and Administration Committee may close to observers at his or her discretion, portions of meetings of the Committee during which sensitive matters such as personnel questions will be discussed.***
9. The Commission shall establish a Bureau. It shall be comprised of the Chair of the Commission, the Vice-Chair of the Commission, the Chair of the Finance and Administration Committee, and four Commissioners representing a range of views and interests. Comm-issioners shall be appointed to the Bureau for a period of two years at Biennial Commission Meetings. In addition, the Commissioner of the host Government for the next meeting of the Commission will serve in an *ex officio* capacity for a period of two years. The Secretary will support Meetings of the Bureau.

   The Chair of the Commission will serve as the Chair of the Bureau and may call upon Chairs of the Commission's sub-groups and committees to participate in Bureau discussions, as appropriate.

   The Bureau will support the work of the Commission by providing advice to the Chair of the Commission and the Secretariat on work on-going under the Convention, especially at times when the Commission is not in session. To this end, the Bureau will:

- provide advice to the Chair and Secretariat on implementing Commission decisions;
- advise the Secretariat on administrative and financial matters between meetings of the Commission;
- assist in the preparation for meetings of the Commission and its sub-groups and committees;
- review progress of work of the committees and sub-groups;
- provide support to the Chair during meetings of the Commission, as may be requested by the Chair.

The Bureau's mandate is to assist with process management. It is not a decision-making forum, and shall not deal with substantive or policy matters under the Convention. The Bureau may consider issues related to financial or administrative tasks within the scope of the Finance and Administration Committee, but only in the context of making recommendations to that Committee.

N. Language*s* of the Commission

1. English shall be the official language of the Commission. English, French and Spanish shall be the working languages of the Commission. Commissioners may speak in any other language, if desired, it being understood that Commissioners doing so will provide their own interpreters. All official publications and communications of the Commission shall be in English. Agreed publications shall be available in English, French and Spanish[1].

O. Records of Meetings

1. The proceedings of the meetings of the Commission, its committees and the Bureau shall be recorded in summary form.
2. The text of each Commission decision adopted at a meeting in accordance with Rule E, or by post, shall be placed on the Commission's public web site in all working languages within 14 days of the conclusion of the meeting or adoption of the decision by post.

P. Reports and communications

1. Commissioners should arrange for reports on the subject of whaling published in their own countries to be sent to the Commission for record purposes.
2. The Chair's Report of the most recent Biennial Commission Meeting or Meeting of the Bureau shall be posted on the Commission's public web site in English within two months of the end of the meeting and in the other working languages as soon as possible thereafter. It shall be published in the Annual Report of the year just completed.
3. All individual and circular communications from the Chair or Secretary to Contracting Governments shall be sent to both the Commissioner appointed under Rule A.1. and to his/her Alternate designated or to the focal or contact point created under Rule A.2. They should also be sent to all accredited ~~intergovernmental~~ observers. All circular communications from the Chair or Secretary to Contracting Governments shall be posted on the Commission's public web site on despatch, unless the Chair, after consulting with the Bureau, deems that a confidential communication is warranted (applicable only for staff issues, infraction cases and information provided by Contracting Governments with a request that it remain confidential), in which case the communication should be sent to the Contracting Governments alone. ***Every year a*** ~~A~~ list of dates and subject titles of such confidential communications shall ***be sent to all Commissioners and Contracting Governments and*** presented to the next Biennial Meeting or to the Bureau in years when the Commission does not meet.

Q. Commission Documents

1. Reports of meetings of all committees, sub-committees and working groups of the Commission are confidential (i.e. reporting of discussions, conclusions and recommendations made during a meeting is prohibited) until the opening plenary session of the Commission meeting to which they are submitted, or in the case of intersessional meetings, until after they have been dispatched by the Secretary to Contracting Governments and Commissioners. This applies equally to member governments and observers. Such reports, with the exception of the report of the Finance and Administration Committee, shall be distributed to Commissioners, Contracting Governments and accredited observers at the same time. Procedures applying to the Scientific Committee are contained in its Rules of Procedure E.5.(a) and E.5.(b).
2. Any document submitted to the Commission for distribution to Commissioners, Contracting Governments or members of the Scientific Committee is considered to be in the public domain unless it is designated by the author or government submitting it to be restricted[2]. Such restriction is automatically lifted when the report of the meeting to which it is submitted becomes publicly available under 1. above.
3. Observers admitted under Rule of Procedure C.1.(a) and (b) may submit Opening Statements which will be included in the official documentation of the Biennial or other Meeting concerned. They shall be presented in the format and the quantities determined by the Secretariat for meeting documentation. The content of the Opening Statements shall be relevant to matters under consideration by the Commission, and shall be in the form of views and comments made to the Commission in general rather than directed to any individual or group of Contracting Governments.[3]
4. All meeting documents shall be included in the Commission's archives in the form in which they were considered at the meeting. All such documents dating from 2011 onwards, and also earlier years where feasible, shall be archived on the Commission's public web site in an accessible fashion by year and category of document.

R. Amendment of Rules

1. These Rules of Procedure and the Rules of Debate may be amended from time to time by a simple majority of the Commissioners voting, but the full draft text of any proposed amendment shall be circulated to the Commissioners at least 60 days in advance of the meeting at which the matter is to be discussed.

[1]As agreed at IWC/59 in Anchorage in 2007: i.e. simultaneous interpretation in French and Spanish in IWC Plenary and private meetings of Commissioners, and translation into French and Spanish of: (1) Resolutions and Schedule amendments; (2) the Chair's reports of biennial meetings and meetings of the Bureau; (3) Annotated Provisional Agendas; and (4) summaries of the Scientific Committee and working group reports. *Ann. Rep. Int. Whaling Comm*. 2007: 56-57.

[2]This does not prevent Contracting Governments from consulting as they see fit on such documents providing confidentiality is maintained as described in Rule of Procedure Q.1.

[3][There is no intention that the Secretariat should conduct advance or *ex-ante* reviews of such statements.]

Financial Regulations

A. Applicability

1. These regulations shall govern the financial administration of the International Whaling Commission.
2. They shall become effective as from the date decided by the Commission and shall be read with and in addition to the Rules of Procedure. They may be amended in the same way as provided under Rule R.1 of the Rules of Procedure in respect of those Rules.
3. In case of doubt as to the interpretation and application of any of these regulations, the Chair is authorised to give a ruling.

B. Financial Year

1. The financial year of the Commission shall be from 1st ~~September~~ ***January*** to 31st ~~August~~ ***December*** (Rules of Procedure, Rule K.1).

C. General Financial Arrangements

1. There shall be established a Research Fund, a General Fund, a Voluntary Fund for Small Cetaceans, ***a Voluntary Fund for Aboriginal Subsistence Whaling and a Voluntary Conservation Fund.***
   (a) The Research Fund shall be credited with voluntary contributions and any such monies as the Commission may allocate for research and scientific investigation and charged with specific expenditure of this nature. ***The Research Fund shall have a balanced distribution among activities, defined according to conservation priorities and the work of the Commission, including small cetaceans.***
   (b) The General Fund shall, subject to the establishment of any other funds that the Commission may determine, be credited or charged with all other income and expenditure.
   (c) The details of the Voluntary Fund for Small Cetaceans are given in Appendix 1.

   The General Fund shall be credited or debited with the balance on the Commission's Income and Expenditure Account at the end of each financial year.
   (d) The details of the Voluntary Fund for Aboriginal Subsistence Whaling are given in Appendix 2.
   (e) The details of the Voluntary Conservation Fund are given in Appendix 3.

   The General Fund shall be credited or debited with the balance on the Commission's Income and Expenditure Account at the end of each financial year.
2. Subject to the restrictions and limitations of the following paragraphs, the Commission may accept funds from outside the regular contributions of Contracting Governments.
   (a) The Commission may accept such funds to carry out programmes or activities decided upon by the Commission and/or to advance programmes and activities which are consistent with the objectives and provisions of the Convention.
   (b) The Commission shall not accept external funds from any of the following:
      (i) Sources that are known, through evidence available to the Commission, to have been involved in illegal activities, or activities contrary to the provisions of the Convention;
      (ii) Individual companies directly involved in legal commercial whaling under the Convention;
      (iii) Organisations which have deliberately brought the Commission into public disrepute.
3. Monies in any of the Funds that are not expected to be required for disbursement within a reasonable period may be invested in appropriate Government or similar loans by the Secretary in consultation with the Chair.
4. The Secretary shall:
   (a) establish detailed financial procedures and accounting records as are necessary to ensure effective financial administration and control and the exercise of economy;
   (b) deposit and maintain the funds of the Commission in an account in the name of the Commission in a bank to be approved by the Chair;
   (c) cause all payments to be made on the basis of supporting vouchers and other documents which ensure that the services or goods have been received, and that payment has not previously been made;
   (d) designate the officers of the Secretariat who may receive monies, incur obligations and make payments on behalf of the Commission;
   (e) authorise the writing off of losses of cash, stores and other assets and submit a statement of such amounts written off to the Commission and the auditors with the annual accounts.
5. The accounts of the Commission shall be audited annually by a firm of qualified accountants selected by the Commission. The auditors shall certify that the financial statements are in accord with the books and records of the Commission, that the financial transactions reflected in them have been in accordance with the rules and regulations and that the monies on deposit and in hand have been verified. The most recent audited financial statements and the audit report shall be submitted to the Biennial Meeting or to the Bureau in years when the Commission does not meet and posted on the Commission's public website by the opening of the Biennial Meeting or Meeting of the Bureau.

D. Yearly Statements

1. At each Biennial Meeting, there shall be laid before the Commission two financial statements:
   (a) a provisional statement dealing with the actual and estimated expenditure and income in respect of the current financial year;
   (b) the budget estimate of expenditure and income for the ensuing two year period including the estimated amount of the individual annual payment to be requested of each Contracting Government for each of the ensuing two years.
   (c) in years when no Biennial Commission Meeting is held the provisional statement for the current financial year identified in regulation D.1.(a) shall be laid before the Meeting of the Bureau.
   (d) in years when no biennial Commission Meeting is held the Bureau shall review the second half of the two year budget.

   Expenditure and income shall be shown under appropriate sub-heads accompanied by such explanations as the Commission may determine.
2. The two financial statements identified in Regulation D.1 shall be despatched by the most expeditious means available to each Contracting Government and each

Commissioner not less than 60 days in advance of the Biennial Commission Meeting. They shall require the Commission's approval after having been referred to the Finance and Administration Committee for consideration and recommendations. A copy of the final accounts shall be sent to all Contracting Governments after they have been audited.

In years when the Commission does not meet, the provisional financial statement for the current year shall be made available to each Contracting Government and each Commissioner not less than 60 days in advance of the Meeting of the Bureau.

3. Supplementary estimates may be submitted to the Commission, as and when may be deemed necessary, in a form consistent with the Annual Estimates. Any supplementary estimate shall require the approval of the Commission after being referred to the Finance and Administration Committee for consideration and recommendation.

E. Contributions

1. As soon as the Commission has approved the budget for any year, the Secretary shall send a copy thereof to each Contracting Government (in compliance with Rules of Procedure, Rule K.2), and shall request it to remit its annual payment.
2. Payment shall be in pounds sterling, drafts being made payable to the International Whaling Commission and shall be payable within 90 days of the said request from the Secretary or by the following ~~28 February~~ ***30 June***, the 'due date' whichever is the later. It shall be open to any Contracting Government to postpone the payment of any increased portion of the amount which shall be payable in full by the following 31 ~~August~~ ***December***, which then becomes the 'due date'. Payment shall be by bank transfer from an account belonging to the Contracting Government or to a state institution of that Government.
3. New Contracting Governments whose adherence to the Convention becomes effective during the first six months of any financial year shall be liable to pay the full amount of the annual payment for that year, but only half that amount if their adherence falls within the second half of the financial year. The due date for the first payment by new Contracting Governments shall be defined as 6 months from the date of adherence to the Convention or before the first day of any Meeting of the Commission or Bureau in which it participates, whichever is the earlier. Subsequent annual payments shall be paid in accordance with Financial Regulation E.2.
4. The Secretary shall report at each Biennial Meeting and Meeting of the Bureau the position as regards the collection of annual payments. The report shall also be sent to all Commissioners including those who are not members of the Bureau before the beginning of the Meeting of the Bureau in the years when the Commission does not meet.
5. For the purpose of application of Rule of Procedure E.2, payments of membership dues shall only count as having been received by the Commission when the funds have been credited to the Commission's account unless the payment has been made and the Commission is satisfied that the delay in receipt is due to circumstances beyond the control of the Contracting Government.

F. Arrears of Contributions

1. If a Contracting Government's annual payments have not been received by the Commission within 24 months of the due date referred to under Regulation E.2 compound interest shall be added on the anniversary of that day and each subsequent anniversary thereafter at the rate of 2% above the base rate quoted by the Commission's bankers on the day. The interest, calculated to the nearest pound, shall by payable in respect of complete years and continue to be payable in respect of any outstanding balance until such time as the amount in arrears, including interest, is settled in full.
2. If a Contracting Government's annual payments, including any interest due[1], have not been received by the Commission by the earliest of these dates:
   - 3 months following the due date; or
   - the day before the first day of the next Biennial or Special Meeting of the Commission or Meeting of the Bureau if such a meeting is held within 3 months following the due date; or,
   - in the case of a vote by postal or other means, the date upon which votes must be received if this falls within 3 months following the due date,

   the right to vote of the Contracting Government concerned shall be suspended as provided under Rule E.2 of the Rules of Procedure.
3. Any interest paid by a Contracting Government to the Commission in respect of late annual payments shall be credited to the General Fund.
4. Any payment to the Commission by a Contracting Government in arrears with annual payments shall be used to pay off debts to the Commission, including interest due, in the order in which they were incurred.
5. If a Contracting Government's annual payments, including any interest due, have not been received by the Commission in respect of a period of 3 financial years;
   (a) no further annual contribution will be charged;
   (b) interest will continue to be applied annually in accordance with Financial Regulation F.1.;
   (c) the provisions of this Regulation apply to the Contracting Government for as long as the provisions of Financial Regulations F.1. and F.2. remain in effect for that Government;
   (d) the Contracting Government concerned will be entitled to attend meetings on payment of a fee per delegate at the same level as Non-Member Government observers;
   (e) the provisions of this Regulation and of Financial Regulations F.1. and F.2. will cease to have effect for a Contracting Government if it makes a payment of 2 years outstanding contributions and provides an undertaking to pay the balance of arrears and the interest within a further 2 years;

[1]A short-term concession of up to 500 pounds sterling will be given to any Contracting Government to take account of remittances sent to cover annual payments, including any interest due, that fall short of the balance owing by up to that amount. This concession is to allow for variations in bank charges and exchange rate that might otherwise reduce the value of the remittance to a lower value than intended in pounds sterling and so leave a Contracting Government with a balance of annual payments, including any interest due outstanding. This short term concession will enable a Contracting Government to maintain its right to vote. Any Contracting Government with a balance outstanding above 500 pounds sterling will not be entitled to the short-term concession and its right to vote shall be suspended. The shortfall of up to 500 pounds sterling allowed by the concession shall then be carried forward to the next financial year as part of the balance of annual payments, including any interest due to the Commission.

(f) interest applied to arrears in accordance with this Regulation will accrue indefinitely except that, if a Government withdraws from the Convention, no further charges shall accrue after the date upon which the withdrawal takes effect.

6. Unless the Commission decides otherwise, a Government which adheres to the Convention without having paid to the Commission any financial obligations incurred prior to its adherence shall, with effect from the date of adherence, be subject to all the penalties prescribed by the Rules of Procedure and Financial Regulations relating to arrears of financial contributions and interest thereon. The penalties shall remain in force until the arrears, including any newly-charged interest, have been paid in full.

Appendix 1

VOLUNTARY FUND FOR SMALL CETACEANS

Purpose

The Commission decided at its 46th Annual Meeting in 1994 to establish an IWC voluntary fund to allow for the participation from developing countries in future small cetacean work and requested the Secretary to make arrangements for the creation of such a fund whereby contributions in cash and in kind can be registered and utilised by the Commission.

Contributions

The Commission has called on Contracting Governments and non-contracting Governments, intergovernmental organisations and other entities as appropriate, in particular those most interested in scientific research on small cetaceans, to contribute to the IWC voluntary fund for small cetaceans.

Acceptance of contributions from entities other than Governments will be subject to the Commission's procedures for voluntary contributions. Where funds or support in kind are to be made available through the Voluntary Fund, the donation will registered and administered by the Secretariat in accordance with Commission procedures.

The Secretariat will notify all members of the Commission on receipt of such voluntary contributions.

Where expenditure is incurred using these voluntary funds the Secretariat will inform the donors of their utilisation.

Distribution of Funds

1. Recognising that there are differences of view on the legal competence of the Commission in relation to small cetaceans, but aware of the need to promote the development of increased participation by developing countries, the following primary forms of disbursement will be supported in accordance with the purpose of the Voluntary Fund:
   (a) provision of support for attendance of invited participants at meetings of the Scientific Committee;
   (b) provision of support for research in areas, species or populations or research methodology in small cetacean work identified as of direct interest or priority in the advice provided by the Scientific Committee to the Commission;
   (c) other small cetacean work in developing countries that may be identified from time to time by the Commission and in consultation with intergovernmental agencies as requiring, or likely to benefit from support through the Fund.
2. Where expenditure is proposed in support of invited participants, the following will apply:
   (a) invited participants will be selected through consultation between the Chair of the Scientific Committee, the Convenor of the appropriate sub-committee and the Secretary;
   (b) the government of the country where the scientists work will be advised of the invitation and asked if it can provide financial support.
3. Where expenditure involves research activity, the following will apply:
   (a) the normal procedures for review of proposals and recommendations by the Scientific Committee will be followed;
   (b) appropriate procedures for reporting of progress and outcomes will be applied and the work reviewed;
   (c) the Secretariat shall solicit the involvement, as appropriate, of governments in the regions where the research activity is undertaken.

Appendix 2

VOLUNTARY FUND FOR ABORIGINAL SUBSISTENCE WHALING

Purpose

To establish an IWC voluntary fund to allow Contracting Governments, or organisations recognised by a Contracting Government, responsible for aboriginal subsistence whaling pursuant to paragraph 13 of the Schedule to receive financial assistance to assist in achieving compliance with IWC measures identified in Schedule amendments. These include, inter alia, the priority for hunter safety, reporting, and weapons improvement programs adopted by the IWC.

The Secretary is requested to make arrangements for the creation of such a fund whereby contributions in cash can be registered and utilised by the Commission.

Contributions

The Commission calls on Contracting Governments and non-Contracting Governments, intergovernmental organisations and other entities as appropriate, in particular those most interested in aboriginal subsistence whaling, to contribute to the IWC Voluntary Fund for Aboriginal Subsistence Whaling.

Acceptance of contributions from entities other than Governments will be subject to the Commission's procedures for voluntary contributions. Where funds are to be made available through the Voluntary Fund, the donation will be registered and administered by the Secretariat in accordance with Commission procedures.

The Secretariat will notify all members of the Commission on receipt of such voluntary contributions.

Where expenditure is incurred using these voluntary funds the Secretariat will inform the donors of their utilisation.

Distribution of funds

1. *The following primary forms of disbursement will be supported in accordance with the purpose of the Voluntary Fund:*
   - *(a) provision of support for research (including surveys) in areas, species or populations that have subsistence hunts or in work identified as of direct interest or priority in the advice provided by the Scientific Committee to the Commission regarding aboriginal subsistence whaling;*
   - *(b) advice or activities aimed at improving the efficiency of whale killing methods and hunter safety, including weapons improvement programs and improvements in hunting techniques aimed at reducing struck and lost rates and times to death;*
   - *(c) technical exchange of information among aboriginal subsistence hunters; and*
   - *(d) other work regarding aboriginal subsistence whaling that may be identified from time to time by the Commission as requiring, or likely to benefit from, support through the Fund.*
2. *Where expenditure involves research activity, the following will apply:*
   - *(a) the normal procedures for review of proposals and recommendations by the Scientific Committee will be followed;*
   - *(b) appropriate procedures for reporting of progress and outcomes will be applied and the work reviewed by the Scientific Committee or relevant sub-committee or working group; and*
   - *(c) the Secretariat shall solicit the involvement, as appropriate, of governments in the regions where the research activity is undertaken.*
3. *Where expenditure involves support for hunter safety, weapons improvement programs, or technical exchange of information, the following will apply:*
   - *(a) the normal procedures for review of proposals and recommendations by the relevant sub-committee or working group will be followed;*
   - *(b) appropriate procedures for reporting of progress and outcomes will be applied and the work reviewed by the relevant sub-committee or working group; and*
   - *(c) the Secretariat shall solicit the involvement, as appropriate, of Governments in the regions where the activity is undertaken or that have relevant expertise.*

Appendix 3

VOLUNTARY CONSERVATION FUND

Purpose

The purpose of this voluntary fund is to support the International Whaling Commission's conservation initiatives, consistent with the purpose and provisions of the International Convention for the Regulation of Whaling, particularly in providing for the proper and effective conservation and development of whale populations. This is a dedicated IWC fund, to ensure financial transparency in monitoring and auditing the use of any voluntary contributions made for the purposes above.

Voluntary Contributions

The Commission welcomes contributions to the fund from Contracting Governments, non-Contracting Governments, international organisations, non-governmental organisations and other entities as appropriate.

Acceptance of contributions from entities other than Contracting Governments will be subject to the Commission's procedures for voluntary contributions as described in the Financial Regulations.

Donors, including Contracting Governments, may further specify a particular purpose for their contribution in accordance with the agreed Project Categories that are eligible for utilisation of this fund. The Commission may not accept funds for which the earmarks would undermine the Commission's ability to carry out objectives established by the Commission.

The Secretariat will administer the use of such funds in accordance with Commission procedures, including relevant audit processes. The Secretariat will notify all Contracting Governments on receipt of such voluntary donations, providing information about the donor, donation amount and any earmarked purpose. The Secretariat will inform donors as appropriate when their contribution has been utilised unless other arrangements have been made.

Distribution of Funds

A Conservation Fund Project Steering Group will oversee the selection of projects and distribution of funds in accordance with the guidance in the terms of reference for the Group and:

- *the established Project Categories*
- *the established Eligibility Criteria*[1]

The Steering Group will submit a prioritised list of projects that are recommended for funding to the Finance and Administration Committee for consideration and subsequent agreement by the Commission. The Steering Group will also be responsible for monitoring and reporting on progress.

[1] *Project Categories and Eligibility Criteria were agreed by the 64th meeting of the Commission. On the advice of the Conservation Fund Project Steering Group, the Commission may decide to revise these documents as required to ensure they remain relevant.*

Rules of Debate

A. Right to Speak

1. The Chair shall call upon speakers in the order in which they signify their desire to speak***, with the exception of accredited Observers, which should be allowed to speak only after all Commissioners desiring to speak do so. As a general rule, Observers will only be allowed to speak once at each Agenda item under discussion, and at the discretion of the Chair.***
2. A Commissioner or Observer may speak only if called upon by the Chair, who may call a speaker to order if his/her remarks are not relevant to the subject under discussion.
3. A speaker shall not be interrupted except on a point of order. He/she may, however, with the permission of the Chair, give way during his/her speech to allow any other Commissioner to request elucidation on a particular point in that speech.
4. The Chair of a committee or working group may be accorded precedence for the purpose of explaining the conclusion arrived at by his/her committee or group.

B. Submission of Motions

1. Proposals and amendments shall normally be introduced in writing in the working language of the meeting and shall be submitted to the Secretariat which shall circulate copies to all delegations in the session. As a general rule, no proposal shall be discussed at any plenary session unless copies of it have been circulated to all delegations normally no later than 6pm, or earlier if so determined by the Chair in consultation with the Commissioners, on the day preceding the plenary session. The presiding officer may, however, permit the discussion and consideration of amendments, or motions, as to procedure, even though such amendments, or motions have not been circulated previously.

C. Procedural Motions

1. During the discussion of any matter, a Commissioner may rise to a point of order, and the point of order shall be immediately decided by the Chair in accordance with these Rules of Procedure. A Commissioner may appeal against any ruling of the Chair. The appeal shall be immediately put to the vote and the question voted upon shall be stated as: Shall the decision of the Chair be overturned? The Chair's ruling shall stand unless a majority of the Commissioners present and voting otherwise decide. A Commissioner rising to a point of order may not speak on the substance of the matter under discussion.
2. The following motions shall have precedence in the following order over all other proposals or motions before the Commission:
   (a) to adjourn the session;
   (b) to adjourn the debate on the particular subject or question under discussion;
   (c) to close the debate on the particular subject or question under discussion.
3. Notwithstanding anything in these Rules, the Chair may suspend the meeting for a brief period at any time in order to allow informal discussions aimed at reaching consensus consistent with Rule E of the Rules of Procedure.

D. Arrangements for Debate

1. The Commission may, in a proposal by the Chair or by a Commissioner, limit the time to be allowed to each speaker and the number of times the members of a delegation may speak on any question. When the debate is subject to such limits, and a speaker has spoken for his allotted time, the Chair shall call him/her to order without delay.
2. During the course of a debate the Chair may announce the list of speakers, and with the consent of the Commission, declare the list closed. The Chair may, however, accord the right of reply to any Commissioner if a speech delivered after he/she has declared the list closed makes this desirable.
3. During the discussion of any matter, a Commissioner may move the adjournment of the debate on the particular subject or question under discussion. In addition to the proposer of the motion, a Commissioner may speak in favour of, and two Commissioners may speak against the motion, after which the motion shall immediately be put to the vote. The Chair may limit the time to be allowed to speakers under this rule.
4. A Commissioner may at any time move the closure of the debate on the particular subject or question under discussion, whether or not any other Commissioner has signified the wish to speak. Permission to speak on the motion for the closure of the debate shall be accorded only to two Commissioners wishing to speak against the motion, after which the motion shall immediately be put to the vote. The Chair may limit the time to be allowed to speakers under this rule.

E. Procedure for Voting on Motions and Amendments

1. A Commissioner may move that parts of a proposal or of an amendment shall be voted on separately. If objection is made to the request of such division, the motion for division shall be voted upon. Permission to speak on the motion for division shall be accorded only to two Commissioners wishing to speak in favour of, and two Commissioners wishing to speak against, the motion. If the motion for division is carried, those parts of the proposal or amendments which are subsequently approved shall be put to the vote as a whole. If all operative parts of the proposal or of the amendment have been rejected, the proposal or the amendment shall be considered to have been rejected as a whole.
2. When the amendment is moved to a proposal, the amendment shall be voted on first. When two or more amendments are moved to a proposal, the Commission shall first vote on the last amendment moved and then on the next to last, and so on until all amendments have been put to the vote. When, however, the adoption of one amendment necessarily implies the rejection of another amendment, the latter amendment shall not be put to the vote. If one or more amendments are adopted, the amended proposal shall then be voted upon. A motion is considered an amendment to a proposal if it merely adds to, deletes from or revises part of that proposal.
3. If two or more proposals relate to the same question, the Commission shall, unless it otherwise decides, vote on the proposals in the order in which they have been submitted. The Commission may, after voting on a proposal, decide whether to vote on the next proposal.

Rules of Procedure of the Technical Committee

A. Participation

1. Membership shall consist of those member nations that elect to be represented on the Technical Committee. Delegations shall consist of Commissioners, or their nominees, who may be accompanied by technical experts.
2. The Secretary of the Commission or a deputy shall be an *ex officio* non-voting member of the Committee.
3. Observers may attend Committee meetings in accordance with the Rules of the Commission.

B. Organisation

1. Normally the Vice-Chair of the Commission is the Chair of the Technical Committee. Otherwise the Chair shall be elected from among the members of the Committee.
2. A provisional agenda for the Technical Committee and each sub-committee and working group shall be prepared by the Technical Committee Chair with the assistance of the Secretary. After agreement by the Chair of the Commission they shall be distributed to Commissioners 30 days in advance of the Biennial Meeting.

C. Meetings

1. The Meeting of the Technical Committee shall be held between the Scientific Committee and Commission meetings with reasonable overlap of meetings as appropriate to agenda requirements. Special meetings may be held as agreed by the Commission or the Chair of the Commission.
2. Rules of conduct for observers shall conform with rules established by the Commission for meetings of all committees and plenary sessions.

D. Reports

1. Reports and recommendations shall, as far as possible, be developed on the basis of consensus. However, if a consensus is not achievable, the committee, sub-committee or working group shall report the different views expressed. The Chair or any national delegation may request a vote on any issue. Resulting recommendations shall be based on a simple majority of those nations casting an affirmative or negative vote.
2. Documents on which recommendations are based should be available on demand immediately following each committee, sub-committee or working group meeting.
3. Technical papers produced for the Commission may be reviewed by the Committee for publication by the Commission.

Rules of Procedure of the Scientific Committee

TERMS OF REFERENCE

The Scientific Committee, established in accordance with the Commission's Rule of Procedure M.1, has the general terms of reference defined in Rule of Procedure M.4.

In this regard, the DUTIES of the Scientific Committee, can be seen as a progression from the scientific investigation of whales and their environment, leading to assessment of the status of the whale stocks and the impact of catches upon them, and then to provision of management advice on the regulation of whaling. This can be defined in the following terms for the Scientific Committee to:

Encourage, recommend, or if necessary, organise studies and investigations related to whales and whaling [Convention Article IV.1(a)]
Collect and analyse statistical information concerning the current condition and trend of whale stocks and the effects of whaling activities on them [Article IV.1 (b)]
Study, appraise, and disseminate information concerning methods of maintaining and increasing the population of whale stocks [Article IV.1 (c)]
Provide scientific findings on which amendments to the Schedule shall be based to carry out the objectives of the Convention and to provide for the conservation, development and optimum utilization of the whale resources [Article V.2 (a) and (b)]
Publish reports of its activities and findings [Article IV.2]

In addition, specific FUNCTIONS of the Scientific Committee are to:

Receive, review and comment on Special Permits issued for scientific research [Article VIII.3 and Schedule paragraph 30]
Review research programmes of Contracting Governments and other bodies [Rule of Procedure M.4]

SPECIFIC TOPICS of current concern to the Commission include:

Comprehensive Assessment of whale stocks [*Rep. int. Whal. Commn* 34:30]
Implementation of the Revised Management Procedure [*Rep. int. Whal. Commn* 45:43]
Assessment of stocks subject to aboriginal subsistence whaling [Schedule paragraph 13(b)]
Development of the Aboriginal Subsistence Whaling Management Procedure [*Rep. int. Whal. Commn* 45:42-3]
Effects of environmental change on cetaceans [*Rep. int. Whal. Commn* 43:39-40; 44:35; 45:49]
Scientific aspects of whale sanctuaries [*Rep. int. Whal. Commn* 33:21-2; 45:63]
Scientific aspects of small cetaceans [*Rep. int. Whal. Commn* 41:48; 42:48; 43:51; 45:41]
Scientific aspects of whalewatching [*Rep. int. Whal. Commn* 45:49-50]

A. Membership and Observers

1. The Scientific Committee shall be composed of scientists nominated by the Commissioner of each Contracting Government which indicates that it wishes to be represented on that Committee. Commissioners shall identify the head of delegation and any alternate(s) when making nominations to the Scientific Committee. The Secretary of the Commission and relevant members of the Secretariat shall be *ex-officio* non-voting members of the Scientific Committee.
2. The Scientific Committee recognises that representatives of Inter-Governmental Organisations with particular relevance to the work of the Scientific Committee may also participate as non-voting members, subject to the agreement of the Chair of the Committee acting according to such policy as the Commission may decide.
3. Further to paragraph 2 above the World Conservation Union (IUCN) shall have similar status in the Scientific Committee.
4. Non-member governments may be represented by observers at meetings of the Scientific Committee, subject to the arrangements given in Rule C.1(a) of the Commission's Rules of Procedure.
5. Any non-governmental organisation sending an accredited observer to a meeting of the Commission may nominate a scientifically qualified observer to be present at meetings of the Scientific Committee. Any such nomination must reach the Secretary not less than 60 days before the start of the meeting in question and must specify the scientific qualifications and relevant experience of the nominee. The Chair of the Scientific Committee shall decide upon the acceptability of any nomination but may reject it only after consultation with the Chair and Vice-Chair of the Commission. Observers admitted under this rule shall not participate in discussions but the papers and documents of the Scientific Committee shall be made available to them at the same time as to members of the Committee.
6. The Chair of the Committee, acting according to such policy as the Commission or the Scientific Committee may decide, may invite qualified scientists not nominated by a Commissioner to participate by invitation or otherwise in committee meetings as non-voting contributors. They may present and discuss documents and papers for consideration by the Scientific Committee, participate on sub-committees, and they shall receive all Committee documents and papers.
   (a) Convenors will submit suggestions for Invited Participants (including the period of time they would like them to attend) to the Chair (copied to the Secretariat) not less than four months before the meeting in question. The Convenors will base their suggestions on the priorities and initial agenda identified by the Committee and Commission at the previous meeting. The Chair may also consider offers from suitably qualified scientists to contribute to priority items on the Committee's agenda if they submit such an offer to the Secretariat not less than four months before the meeting in question, providing information on the contribution they believe that they can make. Within two weeks of this, the Chair, in consultation with the Convenors and Secretariat, will develop a list of invitees.
   (b) The Secretary will then promptly issue a letter of invitation to those potential Invited Participants suggested by the Chair and Convenors. That letter will state that there may be financial support available, although invitees will be encouraged to find their own support. Invitees who wish to be considered for travel and subsistence will be asked to submit an estimated airfare (incl. travel to and from the airport) to the Secretariat, within 2 weeks. Under certain circumstances (e.g. the absence of a potential participant from their institute), the Secretariat will determine the likely airfare.

At the same time as (b) a letter will be sent to the government of the country where the scientists is domiciled for the primary purpose of enquiring whether that Government would be prepared to pay for the scientist's participation. If it is, the scientist is no longer an Invited Participant but becomes a national delegate.

(c) At least three months before the meeting, the Secretariat will supply the Chair with a list of participants and the estimated expenditure for each, based on (1) the estimated airfare, (2) the period of time the Chair has indicated the IP should be present and (3) a daily subsistence rate based on the actual cost of the hotel deemed most suitable by the Secretary and Chair[1], plus an appropriate daily allowance.

At the same time as (c) a provisional list of the proposed Invited Participants will be circulated to Commissioners, with a final list attached to the Report of the Scientific Committee.

(d) The Chair will review the estimated total cost for all suggested participants against the money available in the Commission's budget. Should there be insufficient funds, the Chair, in consultation with the Secretariat and Convenors where necessary, will decide on the basis of the identified priorities, which participants should be offered financial support and the period of the meeting for which that support will be provided. Invited Participants without IWC support, and those not supported for the full period, may attend the remainder of the meeting at their own expense.

(e) At least two months before the meeting, the Secretary will send out formal confirmation of the invitations to all the selected scientists, in accordance with the Commission's Guidelines, indicating where appropriate that financial support will be given and the nature of that support.

(f) In exceptional circumstances, the Chair, in consultation with the Convenors and Secretariat, may waive the above time restrictions.

(g) The letter of invitation to Invited Participants will include the following ideas:

Under the Committee's Rules of Procedure, Invited Participants may present and discuss papers, and participate in meetings (including those of subgroups). They are entitled to receive all Committee documents and papers. They may participate fully in discussions pertaining to their area of expertise. However, discussions of Scientific Committee proced-ures and policies are in principle limited to Committee members nominated by member governments. Such issues will be identified by the Chair of the Committee during discussions. Invited Participants are also urged to use their discretion as regards their involvement in the formulation of potentially controversial recommendations to the Commission; the Chair may at his/her discretion rule them out of order.

(h) After an Invited Participant has his/her participation confirmed through the procedures set up above, a Contracting Government may grant this person national delegate status, thereby entitling him/her to full participation in Committee proceedings, without prejudice to funding arrangements previously agreed upon to support the attendance of the scientist in question.

7. A small number of interested local scientists may be permitted to observe at meetings of the Scientific Committee on application to, and at the discretion of, the Chair. Such scientists should be connected with the local Universities, other scientific institutions or organisations, and should provide the Chair with a note of their scientific qualifications and relevant experience at the time of their application.

B. Agenda

1. The initial agenda for the Committee meeting of the following year shall be developed by the Committee prior to adjournment each year. The agenda should identify, as far as possible, key issues to be discussed at the next meeting and specific papers on issues should be requested by the Committee as appropriate.
2. The provisional agenda for the Committee meeting shall be circulated for comment 60 days prior to the Annual Meeting of the Committee. Comments will normally be considered for incorporation into the draft agenda presented to the opening plenary only if received by the Chair 21 days prior to the beginning of the Annual Meeting.

C. Organisation

1. The Scientific Committee shall include standing sub-committees and working groups by area or species, or other subject, and a standing sub-committee on small cetaceans. The Committee shall decide at each meeting on sub-committees for the coming year.
2. The sub-committees and working groups shall prepare the basic documents on the identification, status and trends of stocks, including biological parameters, and related matters as necessary, for the early consideration of the full Committee.
3. The sub-committees, except for the sub-committee on small cetaceans, shall concentrate their efforts on stocks of large cetaceans, particularly those which are currently exploited or for which exploitation is under consideration, or for which there is concern over their status, but they may examine matters relevant to all cetaceans where appropriate.
4. The Chair may appoint other sub-committees as appropriate.
5. The Committee shall elect from among its members a Chair and Vice-Chair who will normally serve for a period of three years. They shall take office at the conclusion of the annual meeting at which they are elected. The Vice-Chair shall act for the Chair in his/her absence.

The election process shall be undertaken by the heads of national delegations who shall consult widely before nominating candidates[2]. The Vice-Chair will become Chair at the end of his/her term (unless he/she declines), and a new Vice-Chair will then be elected. If the Vice-Chair declines to become Chair, then a new Chair must also be elected. If the election of the Chair or Vice-Chair is not by consensus, a vote shall be

[1][Invited participants who choose to stay at a cheaper hotel will receive the actual rate for their hotel plus the same daily allowance.]

[2]The Commission's Rule of Procedure on voting rights (rule E.2) also applies to the Scientific Committee.

conducted by the Secretary and verified by the current Chair. A simple majority shall be decisive. In cases where a vote is tied, the Chair shall have the casting vote. If requested by a head of delegation, the vote shall proceed by secret ballot. In these circumstances, the results shall only be reported in terms of which nominee received the most votes, and the vote counts shall not be reported or retained.

D. Meetings

1. Meetings of the Scientific Committee as used in these rules include all meetings of subgroups of the Committee, e.g. sub-committees, working groups, workshops, etc.
2. The Scientific Committee shall meet prior to the Biennial Meeting of the Commission or in years when the Commission does not meet, the Scientific Committee shall meet prior to the meeting of the Bureau. Special meetings of the Scientific Committee or its subgroups may be held as agreed by the Commission or the Chair of the Commission.
3. The Scientific Committee will organise its work in accordance with a schedule determined by the Chair with the advice of a group comprising sub-committee/ working group chairs and relevant members of the Secretariat.

E. Scientific Papers and Documents

The following documents and papers will be considered by the Scientific Committee for discussion and inclusion in its report to the Commission:

1. Progress Reports. Each nation having information on the biology of cetaceans, cetacean research, the taking of cetaceans, or other matters it deems appropriate should prepare a brief progress report following in the format agreed by the Committee.
2. Special Reports. The Committee may request special reports as necessary on matters to be considered by the Committee for the following year.
3. Sub-committee Reports. Reports of the sub-committees or working groups shall be included as annexes to the Report to the Commission. Recommendations contained therein shall be subject to modification by the full Committee before inclusion in its Report.
4. Scientific and Working Papers.
   (a) Any scientist may submit a scientific paper for consideration by the Committee. The format and submission procedure shall be in accordance with guidelines established by the Secretariat with the concurrence of the Committee. Papers published elsewhere may be distributed to Committee members for information as relevant to specific topics under consideration.
   (b) Scientific papers will be considered for discussion and inclusion in the papers of the Committee only if the paper is received by the Secretariat on or by the first day of the annual Committee meeting, intersessional meeting or any sub-group. Exceptions to this rule can be granted by the Chair of the Committee where there are exceptional extenuating circumstances.
   (c) Working papers will be distributed for discussion only if prior permission is given by the Chair of the committee or relevant sub-group. They will be archived only if they are appended to the meeting report.
   (d) The Scientific Committee may receive and consider unpublished scientific documents from non-members of the Committee (including observers) and may invite them to introduce their documents at a meeting of the Committee provided that they are received under the same conditions (with regard to timing etc.) that apply to members.
5. Publication of Scientific Papers and Reports.
   (a) Scientific papers and reports considered by the Committee that are not already published shall be included in the Commission's archives in the form in which they were considered by the Committee or its sub-committees. Papers submitted to meetings shall be available on request at the same time as the report of the meeting concerned (see (b) below).
   (b) The report of the Annual Meeting of the Scientific Committee shall be distributed to all Commissioners in accordance with the Commission's Rule of Procedure M.5.

   Reports of intersessional Workshops or Special Committee Meetings are confidential until they have been dispatched by the Secretary to the full Committee, Commissioners and Contracting Governments.

   Reports of intersessional Steering Groups or Sub-committees are confidential until they have been discussed by the Scientific Committee, normally at an Annual Meeting.

   In this context, 'confidential' means that reporting of discussions, conclusions and recommendations is prohibited. This applies equally to Scientific Committee members, invited participants and observers. Reports shall be distributed to Commissioners, Contracting Governments and accredited observers at the same time.

   The Scientific Committee should identify the category of any intersessional meetings at the time they are recommended.
   (c) Scientific papers and reports (revised as necessary) may be considered for publication by the Commission. Papers shall be subject to peer review before publication. Papers submitted shall follow the Guidelines for Authors published by the Commission.

F. Review of Scientific Permits

1. When proposed scientific permits are sent to the Secretariat before they are issued by national governments the Scientific Committee shall review the scientific aspects of the proposed research at its annual meeting, or during a special meeting called for that purpose and comment on them to the Commission.
2. The review process shall take into account guidelines issued by the Commission.
3. The proposed permits and supporting documents should include specifics as to the objectives of the research, number, sex, size, and stock of the animals to be taken, opportunities for participation in the research by scientists of other nations, and the possible effect on conservation of the stock resulting from granting the permits.
4. Preliminary results of any research resulting from the permits should be made available for the next meeting of the Scientific Committee as part of the national progress report or as a special report, paper or series of papers.

G. Financial Support for Research Proposals

1. The Scientific Committee shall identify research needs.
2. It shall consider unsolicited research proposals seeking financial support from the Commission to address these needs. A sub-committee shall be established to review and rank research proposals received 4 months in advance of the Annual Meeting and shall make recommendations to the full Committee.
3. The Scientific Committee shall recommend in priority order those research proposals for Commission financial support as it judges best meet its objectives.

H. Availability of data

The Scientific Committee shall work with the Secretariat to ensure that catch and scientific data that the Commission holds are archived and accessible using modern computer data handling techniques. Access to such data shall be subject to the following rules.

1. Information identified in Section VI of the Schedule that shall be notified or forwarded to the IWC or other body designated under Article VII of the Convention.

   This information is available on request through the Secretariat to any interested persons with a legitimate claim relative to the aims and purposes of the Convention[3].
2. Information and reports provided where possible under Section VI of the Schedule.

   When such information is forwarded to the IWC a covering letter should make it clear that the information or report is being made available, and it should identify the pertinent Schedule paragraph under which the information or report is being submitted.

   Information made available to the IWC under this provision is accessible to accredited persons as defined under 4. below, and additionally to other interested persons subject to the agreement of the government submitting the information or report.

   Such information already held by the Commission is not regarded as having been forwarded until such clarification of its status is received from the government concerned.
3. Information neither required nor requested under the Schedule but which has been or might be made available to the Commission on a voluntary basis.

   This information is of a substantially different status from the previous two types. It can be further divided into two categories:

   (a) Information collected under International Schemes.
      (i) Data from the IWC sponsored projects.
      (ii) Data from the International Marking Scheme.
      (iii) Data obtained from international collaborative activities which are offered by the sponsors and accepted as contributions to the Comprehensive Assessment, or proposed by the Scientific Committee itself.

   Information collected as the result of IWC sponsored activities and/or on a collaborative basis with other organisations, governments, institutions or individuals is available within those contributing bodies either immediately, or, after mutual agreement between the IWC and the relevant body/person, after a suitable time interval to allow 'first use' rights to the primary contributors.

   (b) Information collected under national programmes, or other than in (a).

   Information in this category is likely to be provided by governments under special conditions and would hence be subject to some degree of restriction of access. This information can only be held under the following conditions:
      (i) A minimum level of access should be that such data could be used by accredited persons during the Scientific Committee meetings using validated techniques or methods agreed by the Scientific Committee. After the meeting, at the request of the Scientific Committee, such data could be accessed by the Secretariat for use with previously specified techniques or validated programs. Information thus made available to accredited persons should not be passed on to third parties but governments might be asked to consider making such records more widely available or accessible.
      (ii) The restrictions should be specified at the time the information is provided and these should be the only restrictions.
      (iii) Restrictions on access should not discriminate amongst accredited persons.
      (iv) All information held should be documented (i.e. described) so that accredited persons know what is held, along with stated restrictions on the access to it and the procedures needed to obtain permission for access.
4. Accredited persons are those scientists defined under sections A.1, 2, 3 and 6 of the Rules of Procedure of the Scientific Committee. Invited participants are also considered as 'accredited' during the intersessional period following the meeting which they attend.

[3][The Government of Norway notes that for reasons of domestic legislation it is only able to agree that data it provides under this paragraph are made available to accredited persons.]