

## Short overview of the work of the Scientific Committee at its 2013 and 2014 Annual Meetings

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### 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, workplans 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 SC65a; 5.1-5.2 in SC65b]**

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 SC65a; 5.3-5.4 in SC65b]**

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 workplan 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 SC65a; 5.6-5.7 in SC65b]**

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 workplan 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 workplan 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 SC65a]

The Committee agreed criteria for the determination of cause of death from carcasses 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 SC65a; 7.1 in SC65b]

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 SC65b, specific recommendations were developed for the Australian rock lobster fishery (see Appendix 1).

### Ship strikes [Item 7.4 in SC65a; 7.2 in SC65b]

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 SC65a; 7.3 and 12.6 in SC65b]**

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 *SLAs* (*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 *SLAs* 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 *SLAs* in time for the Commission’s 2018 Biennial Meeting. Four *SLAs* 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 workplan 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 *SLAs*, 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 *SLAs* 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 *SLAs* are completed.

**Management regime for the Makah hunt [Item in SC65a]**

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 SC65a; 8.3 in SC65b]**

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 *SLAs* and it **reaffirmed** this view as it has for the previous 12 years. [SC65b]

**Greenland conversion factors [Item 8.5 in SC65a; 8.2 in SC65b]**

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) 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 [SC65b].

### 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.

### 9.3 Bering-Chukchi-Beaufort (BCB) 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 (IWC, 2009) 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 2013-2018. 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 its work on assessing the status of Antarctic minke whales. The Committee has agreed a workplan 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-studied 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 workplan developed.

#### **10.4 In-depth assessment of North Pacific sei whales [Item 10.4 in SC65a and Item 10.5 in SC65b]**

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 SC65b]**

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 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 Peninsula Valdes (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 ship 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 (SC65a). At SC65b, 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 (UMS) 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 S65a and SC65b]

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;

- (e) encouraging the adoption of the process described in Nowacek *et al.* (2013) for minimising the effects of seismic surveys on cetaceans.

### 12.5 Impacts of climate change on cetaceans [Agenda items 12.5 both in S65a and SC65b]

The primary focus of discussions related to developing a future workplan (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.

## 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 – SC65a] 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 [SC65b], the Committee **reiterated** this advice and recommended increased research efforts in all areas of potential removals.

### 14.1 [2014 – SC65b] 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 SC65a and 14.3 in SC65b]**

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 SC65a and 14.4 in SC65b]**

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 (SC65a)*

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 SC65b). 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 traditional undertaken but the Committee agreed that more effort to obtain information was required to highlight the need for information and a mechanism was developed (SC65b) 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 5-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 (SC65a); guiding principles for whalewatching; and making recommendations more visible.

### **15.5 Emerging whalewatching industries of concern [Item 15.4.7 in SC65a and Item 15.6.1 in SC65b]**

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 (SC65a) and Japan (SC65b) 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 SC65b.

### **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 [SC65a]*

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 2003-2007. The full Panel report is SC/65a/Rep03. 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 [SC65b]*

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. 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 (see Annex U) 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 (SC65a), 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 SC65a and 17.3 in SC65b]**

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 SC65b 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 Workplan**

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 SC65b]**

The Terms of Reference for the Committee's review process can be found in Annex R 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<sup>1</sup>.

#### **18.2 South Atlantic Sanctuary proposal [Item 18.2 in SC65b]**

During discussion individual Committee members made comments about the proposal. The Committee advised 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.

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<sup>1</sup> 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/CCRep8.

## **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 **recommended** 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 the 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, 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 2015 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 (JCRM 15 (suppl.) on page 64 while for 2014 it is on Table 21 on page 78 of IWC/65/Rep1(2014). 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 2014/2015 period are essential if it is to meet its two-year workplan.

## **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/Rep1(2014).

## **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/Rep1(2014).

## 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 workplan). 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.

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/Rep1(2014). 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/Rep1(2014). 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 budget 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 [SC65a]

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 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 SC65a and 27.1 at SC65b]

The Committee received a paper (SC/65b/SCP1) 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 SC65b]**

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 reviewed in the light of experience.

**27.4 Improving the Scientific Committee budget review process [Item 27.3 in SC65b]**

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; (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 workplan. This is summarised in Fig.5 on page 92 of IWC/65/Rep1 (2014).

**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.

## APPENDIX

**Text of the main Recommendations and agreements from the 2013 [SC65a] and 2014 [SC65b] Scientific Committee reports. Please note that the full reports 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 SC65a; 5.1-5.2 in SC65b]

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. [SC65a]

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. [SC65a]

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. [SC65a]

#### Matters relevant to the proposed CLA amendment [Agenda items 5.2-5.4 in SC65a; 5.3-5.4 in SC65b]

The Committee **recommends** that Allison contact the Norwegian Computing Center to resolve any final coding issues. [SC65a]

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. [SC65b]

The Committee **recommends** that Punt and Allison include the variants of the RMP considered by Aldrin and Huseby (2004) 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. [SC65b]

#### Update ‘Requirements and Guidelines for Conducting Surveys’ [Agenda item 5.6 in SC65b]

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;
  - (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 SC65b]

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 SC65a and SC65b]

The Committee **agrees** that, according to the Committee’s Requirements and Guidelines for *Implementations* [1]:

- (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. [SC65a]

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. [SC65a]

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. [SC65b]

#### **North Atlantic fin whales [Agenda item 6.2 both in SC65a and SC65b]**

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. [SC65a]

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. [SC65b]

#### **North Atlantic common minke whales [Agenda item 6.3 both in SC65a and SC65b]**

The Committee **recommends** the holding of a joint AWMP/RMP intersessional Workshop to consider stock structure hypotheses for common North Atlantic minke whales. [SC65a]

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, SC65a report). [SC65a]

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*. [SC65a]

#### **North Atlantic sei whales [Agenda item 6.4 both in SC65a and SC65b]**

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. [SC65a] ...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. [SC65b]

#### **Western North Pacific Bryde's whales [Agenda item 6.5 both in SC65a and SC65b]**

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 SC65a]**

The Committee **recommends** that these [criteria and definitions] be adopted for the IWC ship strike database [Annex J, Appendix 2, SC65a]

### **Entanglement of large whales [Agenda item 7.3 in SC65a; 7.1 in SC65b]**

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. [SC65a]

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. [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65b]

### **Ship strikes [Agenda item 7.4 in SC65a; 7.2 in SC65b]**

#### *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. [SC65a]

The Committee **reiterates** previous recommendations that member nations should submit data to the IWC's global database as soon as possible. [SC65a]

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. [SC65b]

#### *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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

#### *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. [SC65a]

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. [SC65a]

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. [SC65b]

### **Marine debris [Agenda item 7.5 in SC65a; 7.3 and 12.6 in SC65b]**

The Committee **endorses** the recommendations of the [first marine debris] Workshop (see SC65a/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. [SC65b]

## **8. ABORIGINAL SUBSISTENCE WHALING MANAGEMENT PROCEDURE (AWMP)**

### **Matters arising out of the *Implementation Review* for eastern North Pacific gray whales [Item 8.1 in SC65a]**

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 SC65a; 8.1 in SC65b]**

#### *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*. [SC65b]

The Committee **concludes** that further work should be undertaken by the developers during the coming year. [SC65b]

#### *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*'. [SC65b]

The Committee **agrees** that the performance of two of the candidate *SLAs* (*SLAs* 3 and 4) meets the Commission's objectives in terms of conservation and need. [SC65b]

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. [SC65b]

#### *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. [SC65b]

#### *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 *SLAs* 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. [SC65b]

## Scientific aspects of an Aboriginal Whaling Scheme [Agenda item 8.4 in SC65a; 8.3 in SC65b]

In 2002, the Committee **strongly recommended** that the Commission adopt the Aboriginal Subsistence Whaling Scheme [3]. The Committee has stated in the past that the AWS provisions constitute an important and necessary component of safe management under AWMP SLAs and it **reaffirms** this view as it has for the previous 12 years. [SC65b]

## Greenland conversion factors [Agenda item 8.5 in SC65a; 8.2 in SC65b]

While aware of the logistical difficulties involved in obtaining these data, it **repeats its recommendations** of last year [for a full report] [SC65a]

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. [SC65b]

## 9. ABORIGINAL SUBSISTENCE WHALING MANAGEMENT ADVICE

### 9.1 Eastern Canada and West Greenland bowhead whales [Agenda item 9.1 both in SC65a and SC65b]

The Committee also **encourages** the Government of Canada to continue research on Eastern Canadian bowheads.

#### *Management advice*

Using the interim safe approach [4, p.16] 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 SC65a and SC65b]

#### *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. [SC65a]

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). [SC65a]

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 SC65a and SC65b]

#### *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.[SC65a]

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*. [SC65a]

#### *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 SC65a; items 9.4 and 9.5 in SC65b]**

##### *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. [SC65a]

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. [SC65a]

#### **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 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 SC65a; items 9.6 in SC65b]**

##### *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. [SC65a]

##### *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 SC65a; items 9.7 in SC65b]**

##### *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. [SC65a]

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.[SC65a]

##### *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 SC65a; items 9.8 in SC65b]**

##### *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. [SC65a]

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. [SC65b]

#### 9.7.2 *Management advice*

The Committee repeated its previous **strong recommendations** that St Vincent and The Grenadines:[SC65a]

- (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. [SC65a]

## 10. WHALE STOCKS

### Antarctic minke whales [Agenda item 10.1 both in SC65a and SC65b]

The Committee is undertaking an in-depth assessment of the Antarctic minke whale. In 2012, the Committee formally agreed abundance estimates [5]. 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. In addition,

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. [SC65a]

### Southern Hemisphere humpback whales [Agenda item 10.2 both in SC65a and SC65b]

#### *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. [SC65a]

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. [SC65a]

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. [SC65a]

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 [SC65a]:

- (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;
- (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. [SC65b]

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. [SC65b]

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. [SC65b]

The Committee **recommends** a thorough synthesis of assessment results and unresolved questions for discussion in SC/66a. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

The Committee recognises the contribution of the AHCW to humpback whales studies in the Southern Hemisphere and **recommends** its continuation. [SC65a]

### **Southern Hemisphere blue whales [Agenda item 10.2 both in SC65a and SC65b]**

#### *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. [SC65a]

The Committee **recommends** that the 380 additional JARPA II blue whale photographs be compared to the ABWC. [SC65a]

The Committee **welcomes** this analysis [IDCR/SOWER blue whale mark-recapture], which provides the first abundance estimates of Antarctic blue whales since Branch [6]. 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. [SC65b]

Migratory movements of 11 pygmy blue whales between Australia and Indonesia as revealed by satellite telemetry were reported (Double, Andrews-Goff [7]). The Committee notes these results on migratory movements with interest and **recommends** the continuation of this work. [SC65b]

### **North Pacific sei whale in-depth assessment [Agenda items 10.4 in SC65a and 10.5 in SC65b]**

Given the abundance data from POWER and JARPEN II, completed catch history, historical abundance data listed in [8, p.211] 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. [SC65b]

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 JARPEN II samples to (a) reconstruct phylogenetic relationships, (b) determine if there are significant difference between the market samples and the JARPEN II samples and (c) investigate the levels of genetic diversity and the factors explaining possible differences. [SC65b]

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. [SC65b]

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. [SC65b]

### **Gray whales in the western North Pacific [Agenda items 10.5 in SC65a and 10.6 in SC65b]**

#### *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. [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

#### *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 GWAP (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 SC65a and 10.7 in SC65b]**

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. [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65a]



### **North Atlantic right whales [Agenda items 10.7 in SC65a and 10.8 in SC65b]**

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 SC65a and 10.9 in SC65b]**

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. [SC65a]

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. [SC65b]

In addition, the Committee **recommends** that Japanese scientists prepare abundance estimates for right whales in the Okhotsk Sea and off the Kamchatka Peninsula. [SC65b]

### **North Atlantic bowhead whales [Agenda items 10.9 in SC65a and 10.10 in SC65b]**

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. [SC65b]

### **Okhotsk Sea bowhead whales [Agenda items 10.10 in SC65a and 10.11 in SC65b]**

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. [SC65a]

The Committee **recommends** collaboration of genetic laboratories to allow analysis of all available genetic samples for a population estimate. [SC65b]

### **Arabian Sea humpback whales [Agenda items 10.11 in SC65a and 10.12 in SC65b]**

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. [SC65a]

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. [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65b]

### **International Cruises [Agenda items 10.12 in SC65a and 10.13 in SC65b]**

#### *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. [SC65b]

The Committee **welcomes** news that the photographic data had been uploaded into the IWC Secretariat's Lightroom database and **recommends** continuation of this work. [SC65b]

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. [SC65a]

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. [SC65b]

#### *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. [SC65a]

#### **Sperm whales [Agenda item 10.14 in SC65b]**

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 S65a and SC65b]**

The Committee ... **welcomes** the developments in epigenetic ageing methods. [SC65b]

#### **Statistical and genetic issues related to stock definition [Agenda items 11.2 both in S65a and SC65b]**

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. [SC65b]

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. [SC65b]

#### **Testing of Spatial Structure Models (TOSSM) [Agenda items 11.3 both in S65a and SC65b]**

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. [SC65b]

### **12. ENVIRONMENTAL CONCERNS [ITEM 12 IN BOTH REPORTS]**

#### **12.2 Pollution [Agenda items 12.2 both in S65a and SC65b]**

##### *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. [SC65a]

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. [SC65b]

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. [SC65b]

##### *Oil spill impacts*

The Committee **commends** this work and **recommends** that these studies [related to the Deepwater Horizon spill] continue. [SC65b]

The Committee also **recommends**: [SC65b]

- (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. [SC65a]

The Committee **reiterates** its previous conclusion [2] 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. [SC65a]

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). [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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 SC65b report). [SC65b]

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 reinstate 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. [SC65a]

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. [SC65a]

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 1950-1960s, 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. [SC65b]

### **12.3 CERD (Cetacean Emerging and Resurging Disease) [Agenda items 12.3 both in S65a and SC65b]**

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. [SC65a]

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. [SC65b]

#### **Anthropogenic sound [Agenda items 12.4 both in S65a and SC65b]**

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65b]

The Committee **recommends** the process described in Nowacel *et al.* (2013) 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. [SC65b]

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. [SC65b]

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. [SC65b]

#### **Impacts of climate change on cetaceans [Agenda items 12.5 both in S65a and SC65b]**

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. [SC65b]

## **Habitat-related issues [Agenda items 12.6 in S65a and 12.6-7 in SC65b]**

The Committee **agrees** that information on marine debris ingestion should be included in national Progress Reports 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. [SC65b]

## **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. [SC65a]

#### *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 [10]. 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. [SC65b]

### **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. [SC65a]

The Committee **encourages** analyses on these issues and **agrees** to invite outside expertise as needed. [SC65a]

### **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). [SC65a]

#### *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. [SC65a]

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. [SC65a]

## **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 SC65a]**

#### **Narrow-ridged finless porpoise (*Neophocaena asiaeorientalis*) [Agenda item 14.1.1. in SC65a]**

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 SC65a]**

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 SC65a]**

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 SC65a]

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 SC65a]

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 SC65a]

#### **Short-finned pilot whales (*Globicephala macrorhynchus*) in Japan [Agenda item 14.1.3 in SC65a]**

In the absence of new information, the Committee **recalls** its previous concerns regarding these stocks (IWC, 1987; 1992). A **recommendation** relating to catches of small cetaceans by Japan (including this species) is given under Item 14.4.1 [SC65a].

#### **Dall's porpoise (*Phocoenoides dalli*) [Agenda item 14.1.4 in SC65a]**

The Committee notes that abundance estimates are now ten years old and catch limits are still probably unsustainable (Wade et al., 2008). The Committee **reiterates** its previous concerns (IWC, 2002a, pp.57-8; 2008a, p.51). A **recommendation** relating to catches of small cetaceans by Japan including this species is given under Item 14.4.1 [SC65a].

#### **White whales of the Okhotsk Sea [Agenda item 14.1.5 in SC65a and 14.4.4 in SC65b]**

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 Udkaya 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). [SC65a]

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. [SC65a]

Last year (IWC, 2014c), 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. [SC65b]

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 Udkaya Bay (IWC, 2014c). [SC65b]

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. [SC65b]

#### **Review of status of small cetaceans in the eastern Mediterranean and Red seas [Agenda item 14.1 in SC65b]**

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 SC65b]***

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 SC65b]***

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 SC65b]***

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 SC65b]***

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;
- (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);
- (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 SC65b]***

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 SC65a and 14.3 in SC65b]***

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. [SC65a].

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. [SC65a]

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). [SC65b]

## **Progress on previous recommendations [Agenda item 14.3 in SC65a and 14.4 in SC65b]**

### *Vaquita [Agenda item 14.3.1 in SC65a and 14.4.1 in SC65b]*

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. [SC65a]

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, SC65a). 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. [SC65a]

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, SC65a). [SC65a]

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. [SC65a]

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. [SC65b]

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. [SC65b]

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. [SC65b]

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. [SC65b]

The Committee also **reiterates** its previous recommendations ([IWC, 2011a](#); [2012a](#)) to continue research on technologies to replace gillnetting for finfish or otherwise to remove all gillnets from the vaquita's entire range ([IWC, 2008d](#); [2009c](#); [2010d](#); [2011d](#); [2012e](#); [2013e](#); [2014h](#)). [SC65b]

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. [SC65b]

### *Hector's dolphin [Agenda item 14.4.2 in SC65b]*

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 SC65a and 14.4.2.1 in SC65b]*

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. [SC65a]

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. [SC65a]

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. [SC65a]

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. [SC65a]

The Committee **commends** the New Zealand Government for maintaining initial and interim protection measures for Maui's dolphin, and adding an additional 350 sq. km set net restriction. However, the Committee **emphasises** that these measures fall significantly short of those previously recommended (IWC, 2013a; 2014c). 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). [SC65a & b]

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. [SC65b]

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 nautical 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 100 m deep and less than 20 nm 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. [SC65b]

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. [SC65b]

*Irrawaddy dolphins [Agenda item 14.3.3 in SC65a and 14.4.6 in SC65b]*

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. [SC65a]

The Committee thanked Porter for this information and **encourages** further investigation in collaboration with health experts and biologists working in these (and other) regions. [SC65a]

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. [SC65a]

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. [SC65b]

*Harbour porpoise [Agenda item 14.3.6 in SC65a]*

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). 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 SC65a]*

The Committee **notes** that the new survey results presented by Oremus *et al.* (2013) 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)* 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 SC65a and 14.4.9 in SC65b]*

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. [SC65a]

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. [SC65a]

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. [SC65a]

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. [SC65b]

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. [SC65b]

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:

- (4) Assess and monitor the impact of intentional and incidental river dolphin capture relative to the density of local populations;
- (5) Evaluate and monitor the use of botos and tucuxis as bait in fishing for piracatinga; and
- (6) Test alternative baits (e.g. slaughter house waste products) for use in piracatinga fishing. [SC65b]

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. [SC65b]

*Russian Far East [Agenda item 14.4.5.1 in SC65b]*

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 SC65b]*

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 SC65b]*

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 SC65b]*

SC/65b/SM18 reports on 9 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 SC65b]*

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;
- (4) a strict enforcement of the existing inshore (inshore of 3nm) 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) 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 SC65a & b]**

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; 1993; 1998c; Kasuya, 1985; 1999). The Committee therefore **re-iterates** its previous concerns (IWC, 1992; 1993; 1998c) and **recommends** that:

- (5) up-to-date assessments of these exploited populations be undertaken, including studies of population structure and life-history;
- (6) 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
- (7) 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 SC65a**]

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), 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 off Taiji. Finally, the Committee noted that stress experienced during long processing time of captured animals (up to 5 days) will increase the likelihood of post-capture mortality (see Annex L). [**Agenda item 14.4.12 in SC65b**]

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 SC65b**]

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 SC65b**]

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 SC65b**]

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 SC65b]

#### **Accidental takes [Agenda item 14.5.1.2 in SC65b]**

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 (>2.5 km long and mesh size >10 cm).

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 SC65a]**

Donovan drew attention to the Committee's 'Report on Significant Direct and Incidental Catches of Small Cetaceans' that was prepared for the United Nations Conference on Environment and Development (UNCED) in 1992 (*Bjørge et al., 1994*). 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 SC65b]**

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. [SC65a]

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. [SC65a]

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. [SC65b]

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.[SC65b]

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. [SC65b]

### **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. [SC65a]

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. [SC65a]

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<sup>1</sup>. [SC65a]

### **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. [SC65a]

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. [SC65b]

#### *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. [SC65a]

The Committee **agrees** to develop a 'background document' to annotate the guiding principles, with an explanation of their origin and evolution, as well as 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). [SC65a]

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. [SC65a]

### **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. [SC65a]

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. [SC65b]

#### *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. [SC65a]

#### *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]. [SC65a]

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. [SC65a]

#### *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**

<sup>1</sup> <http://iwc.int/whalewatching>.

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. [SC65a]

#### 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. [SC65a]

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. [SC65a]

Last year [5, p.61], 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. [SC65a]

#### 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. [SC65a]

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. [SC65b]

### 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.

## 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 SC65b]**

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/Rep2) 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 SC65b report.

### **17.3 Planning for periodic review of results from JARPA II**

The Committee **reaffirms** its guidelines [11] 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 SC65b]**

##### **JARPA II**

In light of the announcement by Japan to cancel the JARPA II programme in the 2014/2015 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.

##### **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.

#### **Workplan [Agenda item 17.4 in SC65b]**

##### *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 [SC65a].

Committee developed a draft workplan, **recognising** that the workplan may be modified under new guidance from the Commission at IWC65 [SC65b].

### **Preparation for the regular review of the Southern Ocean Sanctuary [Agenda item 18.1 in SC65b]**

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/O1 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 SC65b]**

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 IWC65 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. [SC65a]

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. [SC65a]

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. [SC65a]

The Scientific Committee **welcomes** the scientific information contributed by on-going IWC-SORP research projects and **recommends** their continuation. [SC65b]

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. [SC65b]

## 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*. *Neophocaena phocaenoides* has been split into the Indo-Pacific finless porpoise, *N. phocaenoides* and the newly recognised narrow-ridged finless porpoise, *N. asiaorientalis*. 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. 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. [SC65a]

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. [SC65a]

The Committee also **agrees** that the IWC list of recognised species should be amended [SC65a]:

*Sousa teuszii* (Kükenthal, 1892) Atlantic humpback dolphin

*Sousa chinensis* (Osbeck, 1765) Pacific humpback dolphin

*Sousa plumbea* (G. Cuvier, 1829) Indian Ocean humpback dolphin

*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. [SC65b]

## 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. [SC65a]

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. [SC65a]

## **21.1 Populations considered based on assessments by the Scientific Committee [SC65a]**

[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*

*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*

*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. [SC65a]

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. [SC65a]

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 [SC65b]

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. [SC65b]

## **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 [SC65a]. 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. [SC65b]

## **23. RESEARCH AND WORKSHOP PROPOSALS AND RESULTS [ITEM 23 IN BOTH REPORTS]**

### **23.1 Review results from previously funded research proposals**

Table 7 [SC65a] or Table 21 [SC65b] shows the progress of funded proposals from last year.

### **23.2 Review Workshop proposals**

Table 8 [SC65a] or Table 22 [SC65b] 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. [SC65a]

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). [SC65b]

After some discussion, the Committee **agrees** to the process given in Annex S and summarised in Fig.1 of SC65b 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 SC65b 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). [SC65b]

## **27. WORKING METHODS OF THE COMMITTEE [ITEM 27 IN BOTH REPORTS]**

### **Annual Meetings [Agenda item 27.1 in SC65a]**

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 SC65b]**

At 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 SC65b]**

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 SC65b]**

Following the development of the budget as described under Item 26 of SC65b 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 workplan 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 be 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 SC65b 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.

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