Report of the Scientific Committee (SC69B)

Bled, Slovenia, 22 April – 3 May 2024

1. INTRODUCTORY ITEMS

The IWC Scientific Committee's 2024 meeting was held from 22 April to 3 May in Bled, Slovenia. The Chair (Zerbini) and Vice-Chair (Porter) worked with subcommittee convenors and the Secretariat to plan this meeting and two pre-meetings.

1.1 Chair's welcome and opening remarks

The Chair welcomed participants and observed that the opening day of SC69B occurred on 'Earth Day'. He noted the theme of Earth Day 2024 is 'Planet vs. Plastic', a theme linked to the Committee's work in response to Commission Resolution 2022-1 (see Item 3.5). The Chair welcomed the new Executive Secretary (Martha Rojas Urrego) to her first Committee meeting and thanked the Secretariat for its work in preparing for the meeting. He also expressed his gratitude to the Vice-Chair and the Convenors for their *pro bono* assistance, including those of intersessional groups.

The Executive Secretary noted that she felt privileged to attend her first Committee meeting. She thanked the Chair and Vice-Chair for their leadership and excellent preparation for this meeting. She also gave special thanks to members of the Committee for generously providing their time and expertise to the IWC. She acknowledged the Committee's world-class scientific research and shared how she looks forward to learning more about the Committee's work. Finally, she thanked the Secretariat, who continued to support the Committee throughout its meeting.

1.2 Remembrances

The Committee was saddened to learn about the deaths of nine scientists connected to the Committee:

(1) Sergey Blokhin was a pioneer of marine mammal science in Russia and worked on western gray whales in the Okhotsk Sea;
(2) Andrew Brierley was a member of the Expert Panel that reviewed the New Scientific Whale Research Program in the Antarctic Ocean (NEWREP-A) special permit proposal in 2015. He subsequently became a member of the Committee and contributed to its work on ecosystem modelling;
(3) Petra Deimer attended the Committee almost every year between 1983 and 2012 and was best known for her work on sperm whales in Madeira;
(4) Craig George collaborated extensively with the Alaska Eskimo Whaling Commission and attended almost every Committee meeting between 1987 and 2023;
(5) Simon Northridge worked on marine ecology, particularly marine mammals and their interaction with the fishing industry. He attended his first Committee meeting in 1995 and was involved with the Committee for almost 30 years;
(6) Gianni Pavan attended Committee meetings in 2004, 2006 and 2009 as part of the Italian delegation and contributed to the Committee's discussions of environmental concerns regarding noise issues;
(7) Roger Payne was the founder and president of Ocean Alliance. He was a member of the US delegation to the Commission meeting (1971-72) and a member of the Committee between 1983 and 1989;
(8) Mike Tillman attended his first Committee meeting in 1974 and served as Chair between 1983 and 1985. He was an Alaskan native and only the second to obtain a PhD; and
(9) Hideyoshi Yoshida worked for 35 years as a whale research biologist and attended Committee meetings from 2000 until his death in 2023.

The Committee paused in silence and respect for these scientists who contributed to the Committee's work and to whale conservation and management. Full obituaries can be found in Annex X.

1.3 Appointment of rapporteurs

Members of the Secretariat were appointed as rapporteurs for Plenary Items and assisted by members of the Committee as appropriate. Convenors appointed rapporteurs for their own subcommittee meetings (Item 1.5).

1.4 Meeting procedures and schedule

Participants were given access to a comprehensive set of documents which detailed the structure and organisation of the Committee. The Chair outlined the meeting arrangements, noting that the overall length had been shortened to reduce costs. The meeting involved 6.5 subcommittee days, with the capacity to run five fixed time slots across three simultaneous sessions each day. In addition, there were four days dedicated to Plenary sessions and two whole Committee sessions to introduce the Southern Ocean Sanctuary (SOS) review. Using a new approach, sessions were planned in advance and updated as needed. A timetable was regularly updated on the virtual document centre (SharePoint).

1.5 Establishment of subcommittees and working groups

Table 1 lists the 16 subcommittees, including the relevant convenor(s).

2. ADOPTION OF AGENDA

The adopted agenda is provided as Annex A.

3. REVIEW OF AVAIILABLE DATA, DOCUMENTS AND REPORTS

3.1 Documents submitted

A list of documents available to the Committee is provided as Annex B.

3.2 National Progress Reports on research

The Commission requires all member nations to provide Progress Reports to the Committee. The National Progress Reports (NPRs) originate in Article VIII Paragraph 3 of the Convention and Scientific Committee Rule of Procedure E.1. As agreed at the 2012 Annual Meeting, NPRs should be submitted electronically through the IWC Progress Reports data portal.

On 8 April 2023, the Secretariat sent a survey to Commissioners and Heads of Delegation to investigate the reasons behind the observed low reporting rate. The survey remained open until the 4 June 2023. Fourteen responses were submitted; most responders knew about the obligation to submit NPRs. The responders who have not submitted an NPR in the last five years, identified the following obstacles: (1) ignorance of the obligation; (2) lack of resources and nominated staff; and (3) difficult-to-use system. The suggested ways to improve submission rates can be summarised in three points: (1) a simple data submission system that will be developed in collaboration with the staff nominated to submit the NPRs (including a file upload feature); (2) transparency on how the data are used; and (3) incorporation of data checks and report summaries including graphical representations of the data.

Countries were reminded on 1 February 2024 (IWC.ALL.470) of the critical importance of providing NPRs and any data relevant to the work of the Commission. The Secretariat reported it had received 15 NPRs before the SC meeting (Argentina, Australia, Brazil, Colombia, Croatia, Germany, Iceland, Mexico, Netherlands, New Zealand, Panama, Peru, South Africa, UK and USA), a submission percentage of 17%.

3.3 Data collection, storage and manipulation

3.3.1 Catch data and other statistical material

Table 2 lists data received by the Secretariat since the 2023 Committee meeting. A summary of large whale catches from the 2023 season is listed in SC/69B/O/08.

3.4 Guidance for the format of recommendations and discussion of Recommendations Database

The Secretariat provided an update on the Database of Recommendations (DoR), noting that recommendations are one of the main ways that the Committee drives its work and communicates with the Commission and the wider world. A guide was made available to assist drafting to ensure effective actions could be taken and directed at the appropriate body. The Secretariat provided suggested updates for recommendations and closures where possible. Subcommittees are encouraged to review their recommendations to ensure that the DoR holds the most up-to-date information.

3.5 Review of Commission resolutions from 2022

At IWC68, the Commission passed Resolution 2022-1 which contains the following operative paragraph: 'REQUESTS the Scientific Committee to develop an approach to be considered by the IWC that would assess the current knowledge of the impact of marine plastic pollution on cetaceans and would provide a global risk assessment that identifies "hotspots" of cetacean exposure to plastic debris'.

In response to this request, through the Environmental Concerns Subcommittee, the Committee developed and discussed a considerable body of information from the Marine Debris Intersessional Correspondence Group (ICG) and members of the Committee. However, the proposed approach to address the Resolution could not be completed at SC69B, and so, the Committee **agrees** the following:

The Chairs and the Head of Science, Conservation and Management (HoSCM), together with the Marine Debris ICG, will consult with appropriate experts within and outside the Committee to complete the Committee's response to this Resolution. This response will include scientific objectives, data requirements, analytic approach, costings, as well as anticipated outputs and timelines. A document authored by the Chair and Vice-Chair of the Committee, and reviewed by appropriate experts, will be submitted to IWC69 as a Commission Plenary Paper.

4. COOPERATION WITH OTHER ORGANISATIONS

The report on Secretariat engagement and observers representing the Committee at the meetings of other international organisations is provided in SC/69B/O/06Rev1. The Commission, Scientific Committee and Conservation Committee (CC) have all adopted numerous recommendations to improve engagement with other organisations. In collaboration with members of the SC, CC and its Standing Working Groups (SWGs), the Secretariat has been working to fulfil this mandate whilst also looking into new engagement opportunities. Staff time and travel funds continue to be limited, especially given the budget cuts agreed at IWC68. This emphasises the need to establish engagement priorities and arrange representation through alternative means, such as virtual participation and engaging members of the IWC community, particularly those who already have delegations at relevant meetings.

Table 1

Subcommittees and convenors for 2024.

Subcommittee/working group name	Convenor	Co-Convenor
Working Group on Photo-ID (PH)	Olson	
Subcommittee on Abundance Estimates, Stock Status and International Cruises (ASI)	Givens	New
Working Group on Sanctuaries (SAN)	Parsons	Rojas-Bracho
Working Group on Databases and Related Issues (GDR)	Double	
Subcommittee on Implementation Simulation Trials (IST)	Donovan	Wilberg
Subcommittee on Aboriginal Subsistence Whaling (ASW)	Walløe	Nelson
Subcommittee on Stock Definition and DNA Testing (SD-DNA)	Lang	Tiedemann
Subcommittee on In-depth Assessments (IA)	Palka	
Subcommittee on the other Northern Hemisphere whale stocks (NH)	Cholewiak	Robbins
Subcommittee on the other Southern Hemisphere whale stocks (SH)	Bell	Herr
Subcommittee on Conservation Management Plans (CMP)	Brownell	Weller
Subcommittee on Non-Deliberate Human-Induced Mortality of Cetaceans (HIM)	Leaper	Minton
Subcommittee on Environmental Concerns (E)	DeMaster	Genov
Subcommittee on Ecosystem Modelling (EM)	Kitakado	
Subcommittee on Small Cetaceans (SM)	Porter	Trujillo
Subcommittee on Whale Watching (WW)	Suydam	Urban-Rámirez

Table 2

Data and programmes received by the Secretariat since SC69A.

Date	From	IWC ref	Description
CATCHES			
Large whales			
15/03/24	Norway: Oien	E171-Cat2023	Norwegian individual minke whale catch data
20/03/24	Greenland: Holm	E171-Cat2023	Greenland Individual catch records for season 2023
20/03/24	Greenland: Holm	E172-INF-IWC69B	Summary of Catches/Infractions Greenland
21/03/24	Japan: Kawai	E171-Cat2023	Individual data for commercial catches by Japan in the N Pacific in 2023
21/03/24	USA: Harris	E172-INF-IWC69B	Summary of Catches/Infractions USA
26/03/24	Iceland: Sigurðsson	E171-Cat2023	Individual records of fin whales caught by Iceland in 2023
26/03/24	USA: Kim	E171-Cat2023	Individual records from the Alaskan aboriginal bowhead hunt 2023
26/03/24	Korea: Won	E172-INF-IWC69B	Infractions Korea
28/03/24	Russia: Litovka	E171-Cat2023	Russia Individual catch records for season 2023
02/04/24	Norway: Meier	E172-INF-IWC69B	Summary of Catches/Infractions Norway
12/04/24	St. Vincent and The Grenadines: Cruickshank-Howard	E171-Cat2023	Catch data for the 2023-24 season
Historical Data			
29/06/23	Greenland: Dorph	E160-Cat2015-2020	Greenland Individual catch records for seasons 2015-20
06/11/23	Aguilar	E161	Revisions/Amendments to Spanish Catches 1925-85
Small cetaceans[1]			
30/03/24	USA: Citta	E171-Cat2023	Summary of beluga catches in Alaska 2019-23 from the Alaska beluga whale committee
03/04/24	NAMMCO - Secretariat	E171-Cat2023	NAMMCO catches DB updated March 2024
SIGHTINGS			
20/04/24	Matsuoka		2023 POWER sightings cruise data
PROGRAMMES			
24/04/23	Brandão	E169	Data and code for the SA Right Whale assessment
30/10/23	Givens	E163-BhdSurveyCode	2019 Bowhead Ice-Based Survey Data for DAA and Code for ASI
20/12/23	Givens	E162	SOSI rainbow plot code and manual
21/01/24	Wilberg	E168	Updated C++ code for the SLA for minke whales off West and East Greenland
23/01/24	Punt and Wilberg	E164-NAfin	NA fin whales updated operating model with SLA, option for stochastic mixing matrices and tested on different compilers
24/01/24	Punt and Wilberg	E165-NAminkes	NA minke implementation trials (used for SOSI)
24/01/24	Punt and Allison	E166	SLAs for AWMPs (excl. gray whales)
29/01/24	L. Witting	E167	Copy of SLA code for WG bowheads
06/02/24	Punt and Wilberg	E168	Variations of Lars Whitting WG Bowhead SLA code - resolved compilation issues
06/03/24	Brandão	E174	Copy of the NA fin SLA

[1]Direct catches of small cetaceans by Japan for 2022 are derived from the official website (SC/69B/O/03) and added to the table of small cetacean direc catches (available through the Secretariat).

This year, eight reports were received from observers representing eight organisations. The Secretariat has collaborated with 17 organisations and attended 45 meetings over the past year. On behalf of the Committee, the Chair thanks the observers for representing the SC in other fora and reporting back to the group.

5. GENERAL ASSESSMENT AND MODELLING ISSUES

Discussion of issues related to the estimation of r_{max} for small cetaceans can be found under Item 12.6. No new topics have been proposed for discussion under this Item in the next biennium.

6. AWMP AND RMP IMPLEMENTATION-RELATED MATTERS

This year, the work under this Item focused on the provision of advice to the Commission on those hunts for which Strike Limit Algorithms (SLAs) have been agreed (i.e., the Greenland hunts of common minke, humpback, bowhead and fin whales; the Alaska and Chukotka hunts of bowhead whales, the Chukotka and potentially Makah hunts of gray whales). The final management advice is incorporated under Item 7. The Committee was informed that to date no changes to the ASW strike limits in the Schedule are proposed, apart from any modifications due to block length (the existing Schedule has a seven-year block whereas the new one will be six years, i.e., 2026-31).

As noted in Annex L, for each hunt, the Committee considers any new information presented in relevant subcommittees (e.g., Annexes E, F, G and O) and discusses whether the new information would cause a change in the manner of providing management advice compared to previous years (i.e., whether the existing SLAs remain appropriate). In each case, the input data were reviewed, agreement was reached on the series of abundance estimates and removals data to be used (where relevant) and the rationale for any updates from previous years was documented.

As the strike-limit advice is for the period 2026-31, it has been assumed that the number of strikes for the 'bridge period' (i.e., between the most recent strike data and the start of the new six-year block) is the strike limit itself. Items 6.1-6.3 present a short overview whilst appendices 2-8 of Annex L document each hunt, the SLAs agreed by the Committee and endorsed by the Commission[1], and the agreed abundance estimates and removals data (if appropriate) used to run the SLAs. Much of the intersessional work to ensure that the Committee is in a position to provide the necessary advice was undertaken by a small group of computing experts who met in Cambridge with the Lead for Statistics and Modelling. The Committee **stresses** the importance of such meetings to its work and **thanks** the participants (Items 23.4 and 24).

6.1 Consideration of management advice on gray whale hunts in light of new information

Last year, the Committee had discussed new information on the recent eastern North Pacific (ENP) gray whale unusual mortality (UME) event and abundance estimates (Annex L, item 4) in the light of the applicability of the Gray Whale SLA which had been tested with a lower frequency of such events. At that time, the Committee examined the results of a selection of trials to investigate the implications of the UME and recent abundance estimates (Punt *et al*., 2023). It had agreed that the reported set of projections showed that the performances of the Gray Whale SLA and the Makah Management Plan are robust to a broader set of scenarios related to episodic events, such as UMEs, than previously considered. It established a small intersessional group to examine whether further trials were needed to examine the suitability of the current SLA as the tool to provide advice for the 2026-31 block. It had also noted the need for the USA to provide the most recent abundance estimates to ASI for review (see Annex D).

After reviewing the available information (e.g., Items 7.1.3, 9.1.3, 10.1.1, 11.1), the Committee **agrees** that no new trials are required before advice can be provided for the next six-year block using the present Gray Whale SLA and the Makah Management Plan in the light of:

(1) The trial results in Punt *et al*. (2023) with respect to robustness (see Annex L, item 3.3);
(2) The new agreed abundance estimates suggesting that the decline had been arrested (see Annex L, appendix 4);
(3) The declaration under US legislation that the UME had ceased (see Annex E); and
(4) The proposed start of the scheduled Implementation Review (IR) after this meeting (see Annex L, item 6).

Appendix 4 in Annex L summarises the information on the Gray Whale SLA, and the removals and abundance estimates needed to run it. The SLA code was updated as needed and all abundance estimates and removals data were reviewed as to their inclusion in the SLA. The agreed data to be used in the SLA are tabulated in Annex L, appendix 4.

6.2 North Atlantic humpback whales

With respect to the West Greenland (WG) Humpback Whale SLA, the Committee **reiterates** that the IR for this SLA should occur in the context of an In-depth Assessment of humpback whales in the whole North Atlantic. The Committee notes that, thanks to the work undertaken in recent years, and the forthcoming 2024 workshop to review existing data and initial

[1]The code for some SLAs required updating to ensure they worked with current compilers. The GitHub repositories for the SLAs are:
https://github.com/intwhcom/Greenland-SLAs
https://github.com/intwhcom/ENP-gray-whales-SLA
https://github.com/intwhcom/BCB-Bowheads-SLA
Committee members wishing to access the site should contact the Secretariat's Lead for Statistics and Modelling.

stock structure hypotheses, it is in a position to begin the In-depth Assessment with a workshop in early 2026 (Item 23.4; Annex L, item 6.2) and to agree *inter alia* on a common modelling framework to complete the IR for the Greenland hunt. It is not possible to predict whether the assessment can be completed at SC70.

The Committee **confirms** that the present WG Humpback Whale SLA remains the best way to provide management advice for this hunt (see Item 7.17).

Previously, the Committee noted that, while a formal SLA was not needed to provide management advice on the small hunt of St. Vincent and the Grenadines, when an In-depth Assessment of the North Atlantic is concluded, it will be possible to develop such an SLA for completeness. The Committee repeats this advice (see Item 7.1.8) whilst agreeing that SLA development can be discussed at SC70 in light of progress with the In-depth Assessment.

6.3 Other hunts

For the other hunts (i.e., the Greenland hunts of common minke, bowhead and fin whales; the Alaska and Chukotka hunts of bowhead whales), after review, the Committee concluded that the new information **confirms** that the existing SLAs remain the best way to provide management advice for the relevant stocks (see Items 7.1.1, 7.1.2, 7.1.4, 7.1.5, 7.1.6; see Annex L, item 3).

6.4 Progress on previous recommendations

Last year, the Committee made a recommendation on computing tasks needed to consolidate the coding of the North Atlantic fin whale trials that formed part of the then recently concluded IR framework for both the AWMP and RMP (IWC, 2023b, Annex L). The tasks were completed and addressed in SC/69B/IST/01 (see Annex L, item 5).

The Committee welcomed the thorough and prompt response to this recommendation, noting that it was largely a product of the small meeting of the computing group in January 2024. It **stresses** the value of this work to enable future IRs and its contribution to the 'succession' work of the Committee. It **encourages** future technical meetings (Item 6) and **agrees** that this recommendation can be closed.

6.5 Biennial and long-term workplan, including review of the Implementation Review schedule

The Aboriginal Whaling Scheme (AWS, IWC, 2019 – developed by the Committee and endorsed by the Commission), the Scientific Committee Handbook (see Item 25.1), the Commission's Rules of Procedure and the Schedule to the International Convention for the Regulation of Whaling impose requirements on: (1) ASW governments and thus hunter organisations seeking aboriginal subsistence whaling (ASW) quotas; and (2) how and when the Scientific Committee provides advice on ASW catch limits. These requirements were developed when Committee meetings were held annually. At IWC68, the Commission agreed that Committee meetings would occur biennially after 2024.

The Committee has spent considerable time discussing the implications of this Commission decision for ASW/IST-related work since then (e.g., IWC, 2023b, item 6.4), including this year (Annex L, item 6).

6.5.1 Abundance estimates

A successful abundance survey is not considered to have 'occurred' until the resulting abundance estimate has been endorsed by the Committee. Upon endorsement, the 10-year time window starts at the time of the survey itself. If a survey occurs at the end of the 10-year interval (e.g., 2024 as for West Greenland) but the analyses are only ready in a non-Committee meeting year (likely 2025 in this case), in principle the 'grace period' provision can be invoked for one year until the estimate can be approved at a Committee meeting, but this is purely a result of a change in meeting timing and not the intention of the 'grace period' provision (that cannot be used in consecutive blocks).

Attention: C, Secretariat

*The Committee **recommends** that, for rare cases such as described under Item 6.5.1, the abundance estimate(s) are reviewed virtually by the ASI Subcommittee as soon as possible after receipt and a short report, including the recommendation for a category, is circulated by the Chair of the Committee to the members by email. The Chair will set an appropriate deadline and a Committee decision will be taken using a 'silence' procedure, assuming that: no response signals agreement; and that, if there is a disagreement with the recommendation of the ASI expert review, it must be accompanied by full documentation of the rationale. The final decision will lie with the Chair of the Committee. This will require a change to the Committee's Rules of Procedure and the final wording should be refined by the Chair of the Committee in conjunction with the Chair of the Finance and Administration Committee for adoption at IWC69.*

6.5.2 Implementation Reviews

Implementation Reviews (IRs) are 'normally' required every 5-6 years under the AWS. For practical reasons, the Committee tries to work on only one such review at a time (although in cases of common ocean areas, AWMP and RMP IRs are combined). An IR 'normally' requires one or two Committee meetings (usually with at least one intersessional workshop) to complete; complex IRs (e.g., if new stock structure hypotheses need to be developed and trials run) may take much longer. In addition, if a Special IR is deemed necessary, this will interfere with the timing of other IRs.

Table 3

Proposed workplan and potential timings of Implementation Reviews under the assumptions of:
(a) adequate intersessional funding; and (b) lengths of time required.
Note: results of IRs can be endorsed by the full Committee only during even years. Green shading indicates common analytical frameworks.

Species/stock	Implementation (and subsequent IRs) completed	Next planned IR subject to sufficient resources
WG humpback whales (AWMP)	2014	Start 2026 after In-depth Assessment
St. Vincent and The Grenadines humpback whales (SLA development)	n/a	Start 2026 after In-depth Assessment
Eastern North Pacific gray whales (AWMP)	2004 (2010, 2013, 2020)	Start 2025, complete ~2026
BCB bowhead whales (AWMP)	2000 (2007, 2012, 2018)	Start 2027
West Greenland bowhead whales (AWMP)	2015 (2022)	Start 2028
Common minke whales off Greenland (AWMP)	2019, 2022	Start 2029
North Atlantic common minke whales (RMP)	1993 (2003, 2008, 2017, 2022)	
North Atlantic fin whales (AWMP, RMP)	2009 (2016, 2023)	Start 2030
North Atlantic fin whales (AWMP, RMP	2009 (2016, 2023)	

Table 3 assumes funding for adequate intersessional activity. The Committee **stresses** that, without adequate funding for intersessional activity and in-person workshops (e.g., see Item 23.4 and Annex L, item 6.1), the robustness of advice guaranteed by the IR component of the ASW will be lost since IRs will only be able to be completed with 12 and 14-year intervals (or longer) as discussed at SC69A (IWC, 2023b, Item 6.4).

Attention: SC, BSC, ASW, C
*The Committee notes that the only guidance provided by the Commission on the priorities for the Committee's workplan at its last meeting related to the high priority for ASW and related essential work on IRs, including simulation trials. This work is critical to the provision of advice under the Schedule. The Committee will continue to fully justify requests for intersessional workshops related to IRs and the provision of ASW advice. However, under a biennial regime, the Committee **requests** that the Commission develop a mechanism to ensure that if unforeseen situations arise that require urgent additional work to enable the provision of management advice, it can be funded in a prompt manner. The Committee **agrees** that the Chair of the Committee should consult with the Chair of the Finance and Administration Committee on this issue prior to IWC69.*

7. STOCKS SUBJECT TO ABORIGINAL SUBSISTENCE WHALING

7.1 New information and progress on recommendations

7.1.1 Eastern Canada/West Greenland bowhead whales

The Canadian Government usually provides information on the subsistence hunt of Eastern Canada-West Greenland (EC-WG) bowhead whales within its waters. Catches in 2023 were not reported in time for the meeting; however, the data are in preparation by the Department of Fisheries and Oceans Canada and expected soon. The Committee **thanks** Canada for its continuing cooperation, **encourages** it to submit the data to the Secretariat and **welcomes** Canadian participants at future meetings. No bowheads were landed in west Greenland in 2023.

As discussed under Item 6.3, the Committee **agrees** that the WG Bowhead Whale SLA remains the best way to provide management advice for this stock and it **confirms** that the limit of up to two whales struck annually for the years 2026-31 will not harm the stock. The general carryover provisions agreed in the AWS apply (see Annex L, appendix 2).

7.1.2 Bering-Chukchi-Beaufort Seas bowhead whales

The Committee received information that one bowhead whale was harvested in Chukotka in 2023; the whale was a pregnant female.

In 2023, during the aboriginal hunt for bowhead whales in Alaska, 55 whales were struck, resulting in 45 bowhead whales landed. The total number of whales struck and the total landed during the hunt in 2023 was slightly lower than the average over the past 10 years (2013-22: mean struck = 58.5, SD = 10.9 and mean landed = 46, SD = 8.41). Efficiency (# landed / # struck) in 2023 was 82%, which was slightly higher than the average for the past 10 years (2013-22: mean of efficiency = 79%). Of the landed whales, 26 were females and 19 were males. Based on total length (≥13.5m in length), four of the females were presumed to be sexually mature. None of those four females was examined by North Slope Borough Department of Wildlife staff and no foetuses were noted by hunters. Based on a baleen length of 40cm, one harvested whale was likely a calf.

Temporal trends in body condition indices of Bering-Chukchi-Beaufort (BCB) bowhead whales based on the girth and length of harvested bowhead whales during 1989-2023 were presented. Trends in body condition were examined for all whales pooled and for each age class separately. Stratified by age class, there was no significant evidence of long-term trends in body condition; indices were generally stable. Continued monitoring is key for understanding how whales may be responding to a changing environment. Given that abundance has approximately doubled during the study period and that there have been large environmental changes, the relative stability of body condition indices is encouraging. The Committee discussed whether body condition indices based on measurements of girth were reliable and noted that blubber thickness may not change as the lipid content of blubber declines. The Committee requested that additional information on the lipid content of blubber be incorporated into future analyses of BCB bowhead body condition.

The 5th BCB bowhead health report provided health information and general status of bowhead whales during 2022 and 2023 (SC/69B/ASW/01). In summary, bowhead whales are responding to rapid environmental change in the Arctic, but population indices and health assessment findings reiterate that the general health of whales remains good and the harvest is sustainable. Continued monitoring of the BCB bowhead whale population remains critical to aid general understanding of the complex pathways and mechanisms by which climate change is influencing migration timing and distribution, prey distribution, and indices of productivity and health.

The Committee **thanks** the authors, the Alaska Eskimo Whaling Commission, the North Slope Borough, and the US Government for providing this information, which is critical for assessing the status and health of the BCB bowhead population and provides important ancillary information on the sustainability of the harvest and the effects of climate change.

As discussed under Item 6.3, the Committee **agrees** that the BCB Bowhead Whale SLA remains the best way to provide management advice for this stock. It **confirms** that in the six-year block 2026-31, a total of up to 336 landed bowhead whales with an annual strike limit of 67 or less will not harm the stock. The general carryover provisions agreed in the AWS apply (see Annex L, appendix 3).

7.1.3 North Pacific gray whales

Harvest data from the aboriginal hunt of gray whales in the Russian Federation were presented. In 2023, 16 communities were involved in whaling. In total, 130 gray whales were struck, of which 129 were landed. Of the landed whales, there were five 'stinky' whales; those with unpleasant odour and taste (Polyakova *et al*., 2023). The meat, mangtak (i.e., skin and outer layer of blubber), intestines and carcasses of the 'stinky' whales were destroyed. All whales struck, 63 males and 67 females, were identified. Mean body length of harvested whales was 10.1m with a mean body weight of 13.6 tons. None of the harvested females were lactating or pregnant. Approximately 29 of the landed whales had evidence of trauma; most of which were consistent with killer whale attacks. The availability of gray whales in Chukotka, their body condition, and the amount of food in their stomachs were considered typical in 2023. All whaling products were only used for local subsistence purposes.

An update on the gray whale mortality event that occurred in the Eastern North Pacific during 2019-23 was presented. Under the US Marine Mammal Protection Act, an Unusual Mortality Event (UME) is associated with a 'significant die-off event'. Under the Act's criteria, the UME was deemed to have occurred from 17 December 2018 to 9 November 2023. A total of 690 whales stranded during the UME along the west coast of North America from Alaska to Mexico (316 in Mexico, 347 in the USA and 27 in Canada). Most of the carcasses in US waters were documented from March to August, during the northward migration, when gray whales were nearing the end of their seasonal fast. Nutritional status was evaluated as either Emaciated/Poor or Thin/Fair in 70% of the examined carcasses. Observations of live whales via photogrammetry and boat-based work during the UME documented animals in lower body condition than during prior years. Disease and biotoxins were not detected, also suggesting that whales died of malnutrition.

Recent gray whale population modelling linked the 1999-2000 and 2019-23 UMEs to a coupling of changes in sea-ice cover and the biomass of seafloor-living crustaceans, the primary prey of gray whales, in localised feeding areas north and south of the Bering Strait (Stewart *et al*., 2023). A combination of low prey biomass and high surface sea-ice cover restricting access to feeding areas could explain the poor body condition, decreased calving rates and increased mortality documented during the two UMEs.

Eguchi *et al*. (2023) provided an update on ENP gray whale calf production. Shore-based counts of cow-calf pairs have been conducted annually in central California since 1994, except for 2020 due to COVID-19. Total calf production of ENP gray whales has been notably low since 2019. In 2022, total calf production was estimated at 216.7 (SE = 33.4, 95% CI = 159-290), representing the lowest estimate on record. While the 2023 estimate is nearly twice that number, it is markedly lower than the estimates in many other years of the time series, including those from 2011-18.

As discussed in detail under Item 6.1, after consideration of the new information, the Committee **agrees** that the Gray Whale SLA remains the best way to provide management advice for this stock. It **confirms** that a total number of landed gray whales of up to 840 in the six-year block 2026-31 will not harm the stock (the annual number struck shall not exceed 140). The general carryover provisions agreed in the AWS apply. The Committee also **advises** that the Makah Management Plan (IWC, 2019b, item 7.1.3) is in accord with the Commission's conservation and management objectives (see Annex L, appendix 4).

7.1.4 Common minke whale stocks off East Greenland

In 2023, 18 minke whales were struck off East Greenland (five males, 13 females), from which all 18 were landed. Samples were collected from six whales.

As discussed under Item 6.3, the Committee **agrees** that the Greenland Common Minke Whale SLA remains the best way to provide management advice for this stock and it **confirms** that the limit of up to 20 whales struck annually for the years 2026-31 will not harm the stock. The general carryover provisions agreed in the AWS apply (see Annex L, appendix 5).

7.1.5 Common minke whale stocks off West Greenland

In 2023, 164 minke whales were struck off West Greenland (33 males, 127 females, four unknown), from which 159 were landed and five lost. Samples were collected from 111 whales. The Committee commends Greenland for collecting a large number of genetic samples.

As discussed under Item 6.3, the Committee **agrees** that the Greenland Common Minke Whale SLA remains the best way to provide management advice for this stock and it **confirms** that the limit of up to 164 whales struck annually for the years 2026-31 will not harm the stock. The general carryover provisions agreed in the AWS apply (see Annex L, appendix 6).

7.1.6 Fin whales off West Greenland

In 2023, two fin whales were struck, landed and sampled off West Greenland (one male and one female).

As discussed under Item 6.3, the Committee **agrees** that the Fin Whale SLA remains the best way to provide management advice for this stock and it **confirms** that the limit of up to 19 whales struck annually for the years 2026-31 will not harm the stock. The general carryover provisions agreed in the AWS apply (see Annex L, appendix 7).

7.1.7 Humpback whales off West Greenland

In 2023, two humpback whales were struck and landed off West Greenland (both female). In addition, one was caught as bycatch in fishing gear; this whale was euthanised and not included as catch. Samples were obtained from the two landed whales.

As discussed in detail under Item 6.2, the Committee **agrees** that the Humpback Whale SLA remains the best way to provide management advice for this stock and it confirms that the limit of up to 10 whales struck annually for the years 2026-31 will not harm the stock. The general carryover provisions agreed in the AWS apply (see Annex L, appendix 8).

Attention: C, CG, ASW

*The Committee has reviewed the available information for all ASW hunts with an agreed SLA under Items 7.1.1-7.1.3. It was informed that no changes to the ASW strike limits in the Schedule are proposed, apart from any modifications due to block length (the existing Schedule has a seven-year block, whereas the new one will be for six years, i.e., 2026-31). It **recommends** that the best way to provide management advice for these hunts is to use the agreed SLAs and that these SLAs have confirmed that the present strike limits in the Schedule (adjusted for the change from a seven to a six-year block) will not harm the stocks.*

7.1.8 Humpback whales off St. Vincent and The Grenadines

In 2023, one female humpback whale was struck and landed off St. Vincent and The Grenadines.

Attention: C, ASW, IA, IST

The Committee notes that no change to the present ASW strike limits has been requested to date. The Committee therefore:

(1) ***Notes** the discussion in 2018 and the tentative abundance estimates from the MONAH project (2004-05) for the North Atlantic between 8,000-13,600 humpback whales (Clapham et al., 2005), although the extent to which this tentative estimate can be applied to the southeastern Caribbean in the context of the St. Vincent hunt is unclear;*

(2) ***Notes** that, in accord with the advice provided in the AWS on the provision of safe management advice, it therefore **advises** the Commission that, as in 2018, given the information on abundance in the North Atlantic combined with the size of the present strike limits (an average of four annually), continuation of those limits will not harm the stock.*

*In providing this advice, the Committee **notes** its previous recommendation that an SLA be developed as soon as an In-depth Assessment of North Atlantic humpback whales is completed. It therefore **recommends** that:*

(1) *The agreed workshop to consider data (including abundance estimates) and initial stock structure hypotheses is held in 2024 (IWC, 2023a, R68C001); and*

(2) *An intersessional workshop is held in early 2026 to begin initial modelling to ensure progress if not completion of the In-depth Assessment at the 2026 meeting to allow inter alia SLA development as soon as possible.*

7.2 Workplan

In 2026, the Committee will review new biological information and catch information on species and stocks subject to aboriginal subsistence whaling. The Committee notes that intersessional work may be necessary to review information received before the next meeting.

8. WHALE STOCKS NOT SUBJECT TO DIRECTED TAKES BY CONTRACTING GOVERNMENTS

8.1 Comprehensive or In-depth Assessments

The main goal of a Comprehensive or In-depth Assessment is to evaluate the status of the current population relative to an appropriate time in the past.

8.1.1 Comprehensive Assessment of North Pacific humpback whales

The Comprehensive Assessment of North Pacific humpback whales began in 2016 (IWC, 2017a) with an intersessional workshop held in 2017 (IWC, 2018b). Since then, input data were updated, further analyses conducted, and the population dynamics model refined. During March 2024, the IWC funded an intersessional meeting to further this work. In response to discussions at the intersessional workshop, the additional work presented at SC69B included updates of the following: mixing rates (SC/69B/IA/02); time series of abundance estimates (Cheeseman *et al*., 2024; SC/69B/IA/06); time series of human-related removal estimates (SC/69B/IA/03); and model structure (SC/69B/IA/07). At SC69B, the updated data were used in the revised model that is based on a sex- and age-aggregated population dynamics model. The model accounted for multiple breeding stocks and multiple feeding grounds (Fig. 1). It was fit to the following: (1) time series of absolute and relative abundance estimates on the breeding and feeding grounds; (2) mixing rates from genetic and photo-ID data to quantify the proportion of animals on each breeding ground that feed on each feeding ground; and (3) time series of removals due to whaling and other human-related activities (e.g., such as fishery bycatch, ship strikes, debris). The model provided adequate fits to all the data sets and sensitivity tests.

The Committee concludes that the In-depth Assessment of the North Pacific humpback whale is complete, pending software validation by the Secretariat. Overall, the Committee notes that the population of North Pacific humpback whales was very low at the end of the post-World War II commercial whaling period (about 1966), but the assessment results show there has been a strong recovery overall, with total population size reaching a level of over 30,000 by 2014 (Fig. 2). Plots of population size and survival rates of each breeding and feeding ground are included in Annex K, appendix 2. Between about 2014 and 2016, humpback whale populations, particularly in the Gulf of Alaska and Southeast Alaska, declined substantially, with this decline linked to the extreme marine heatwave in that area. The decline was also supported by other studies (Arimitsu *et al*., 2021; Moran *et al*., 2023; Gabriele *et al*., 2022). The adequate model fits in all breeding and feeding areas suggest the modelled declines represent a real decline in abundance rather than just relocation to un-surveyed areas. Further confirmation of this was noted from preliminary investigations in areas where whales have not returned, i.e., to Glacier Bay, Alaska.[2] The Committee further notes that the Asia and Central American breeding populations are still relatively small, but populations in both areas have continued to recover. Continued and intensive monitoring of this population is essential as some of the breeding populations are still relatively small, and adult survival rates will be negatively impacted from more frequent marine heatwaves.

The next steps for this assessment are the validation of the software used to implement the assessment and complete documentation of the assessment.

Attention: SC

The Committee thanks IWC-POWER and all the organisations and researchers who contributed to the data collection and analyses of the North Pacific humpback whale, which made it possible to complete this Comprehensive Assessment, pending validation of the software. To finalise the assessment, it ***recommends****:*

(1) *Reestablishing the ICG;*
(2) *Validating the assessment software; and*
(3) *Developing an authored paper of the assessment and associated input data to be submitted to the Committee at SC70 and the Journal of Cetacean Research and Management.*

8.1.2 Comprehensive Assessment of North Pacific sei whales

The Comprehensive Assessment of North Pacific sei whales had been structured around attempts to integrate information from the following sources of data: (1) historical commercial catches; (2) estimates of recent absolute abundance from IWC-POWER and other surveys; (3) indices of relative abundance derived from other surveys and sightings from scouting vessels, extending back to 1965; and (4) data from Discovery marks and recoveries in a multi-area age-structured population model. Two stock structure hypotheses were developed: (1) a single stock of sei whales distributed throughout the North Pacific; and (2) five stocks, centred on six sub-areas, but with some mixing in their summering ground sub-area (Fig. 3).

There has been no consensus on the relative plausibility of the two hypotheses as the Committee has been unable to develop a population model that could consistently integrate all the available information on North Pacific sei whales.

[2] https://www.nps.gov/glba/blogs/recent-declines-in-humpback-whales-in-glacier-bay-icy-strait-is-their-heyday-over.htm

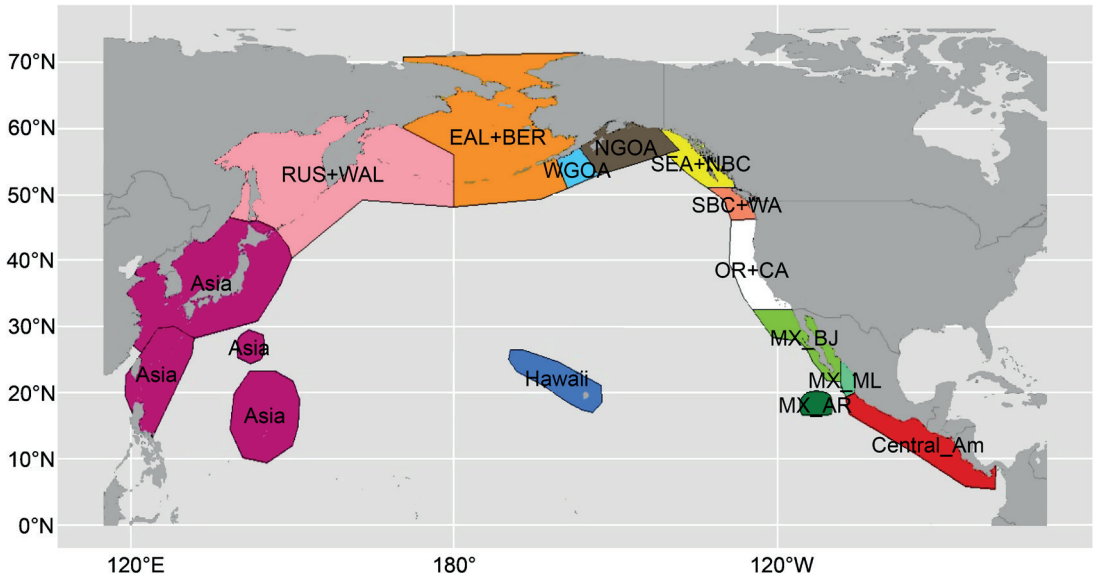

Fig. 1. Current boundaries for the breeding (Asia, Hawaii, Central_Am, and MX) and feeding areas (RUS+WAL, EAL+BER, WGOA, NGOA, SEA+NBC, and OR+CA). RUS+WAL: Russia and western Aleutians. EAL+BER: eastern Aleutians and Bering Sea. WGOA: western Gulf of Alaska. NGOA: northern Gulf of Alaska. SEA+NBC: southeast Alaska and northern British Columbia. SBC+WA: southern British Columbia and Washington. OR+CA: Oregon and California. MX_BJ: Baja Mexico. MX_ML: Mexico mainland. MX_AR: Archipiélago de Revillagigedo. Central_Am = Central America.

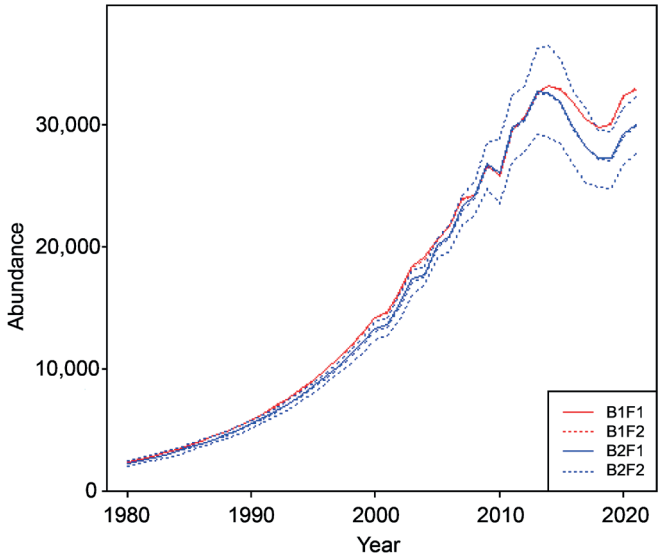

Fig. 2. Time-trajectories of the abundance for the North Pacific humpback whales for the base-case versions of the model for the four scenarios resulting for the two breeding and two feeding hypotheses (B1F1, B1F2, B2F1 and B2F2). Dashed blue lines are the 90% confidence intervals for the B2F2 hypothesis.

In particular, the recent high absolute abundance (ca. 30,000 whales) for the Pelagic sub-area is hard to reconcile with the apparent substantial depletion indicated by the relative abundance and mark-recapture data during commercial whaling. The continued rarity of sei whales in some areas of previous high catches, such as the Aleutians and Gulf of Alaska and the western and eastern coastal areas (Fig. 3.), are also hard to reconcile with the high overall abundance under the assumption of a single population. In the absence of an alternative model capable of integrating all the data, the Committee previously recommended that a status document be developed that summarises the available information on North Pacific sei whales (focusing on what is most directly relevant to an assessment) and the results of attempts to fit a population model. This work is ongoing.

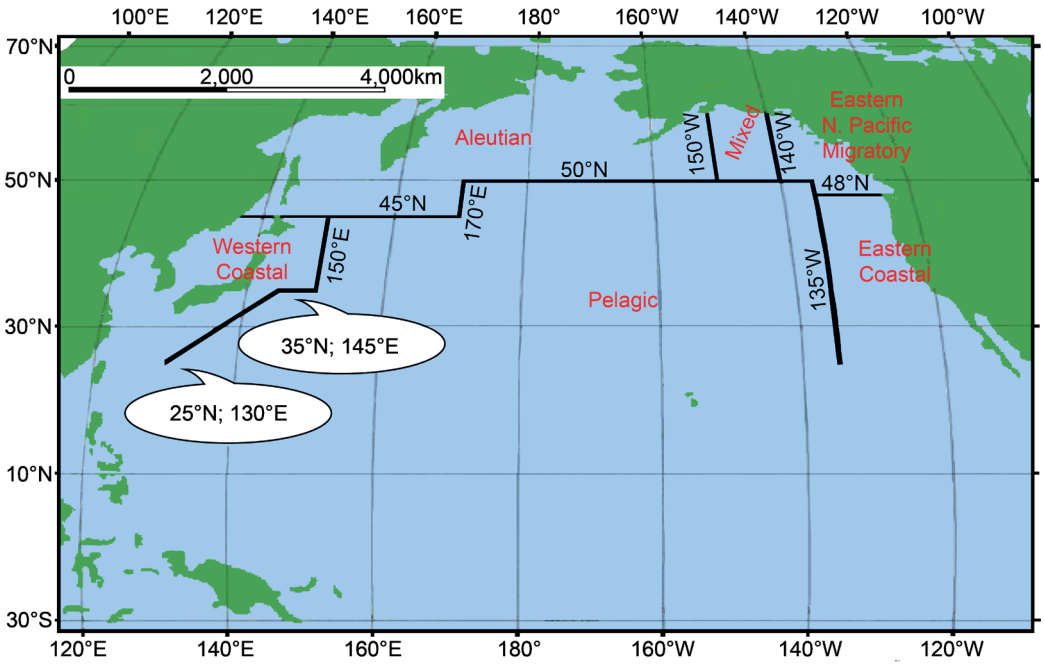

Fig. 3. The 6 sub-areas used in the Comprehensive Assessment for North Pacific sei whales.

Attention: SC
*The Committee **reiterates** the need to summarise the Comprehensive Assessment of North Pacific sei whales. To accomplish this, it **recommends**:*

(1) *Reestablishing the ICG; and*
(2) *Finalising the summary document by the end of 2024 and submit it to both SC70 and the Journal of Cetacean Research and Management for review.*

The Committee noted that genetic analyses have been presented only for samples from the pelagic area of the species range. The analysis of samples obtained from coastal areas would contribute to the understanding of the different stock structure hypotheses.

Attention: SC, CG-Republic of Korea, Russian Federation and US, G-Japan and Canada
*The Committee **reiterates** its previous recommendation and encourages the analyses of existing genetic samples of sei whales from the coastal waters of the North Pacific and the presentation of the results to the Committee (IWC, 2023a, item 8.1.2). Results of analyses based on samples from Canada and Japan are also welcomed.*

8.1.3 Progress on In-depth Assessment of western North Pacific common minke whales

The In-depth Assessment of Western North Pacific common minke whales is based on three stock hypotheses (see Fig. 4 for sub-area definitions and Fig. 5 for the genetics samples that led to the development of stock hypothesis E):

(1) There is a single J-stock that occurs to the west of Japan (Sea of Japan/East Sea and Yellow Sea) and the Pacific coast of Japan (sub-areas 2C, 7CS, 7CN, 11 and 12SW) and a single O-stock in sub-areas to the east and north of Japan (2C, 2R, 3, 4, 7CS, 7CN, 7WR, 7E, 8, 9, 9N, 10E, 11, 12SW, 12NE and 13) (referred to as hypothesis A);
(2) As for hypothesis (A), except there is a third stock (Y) that resides in the Yellow Sea (sub-areas 1W, 5 and 6W) and overlaps with J-stock in the southern part of sub-area 6W (referred to as hypothesis B); and
(3) There are four stocks, referred to as Y, J, P and O, two of which (Y and J) occur in the Sea of Japan/East Sea, and the other three (J, P, and O) are found to the east of Japan. Stock P is a coastal stock (referred to as hypothesis E).

The operating models for western North Pacific common minke whales were originally developed as part of an RMP IR. However, after Japan left the IWC, it was agreed that the work should continue as an In-depth Assessment (IWC, 2021) with a focus on the effects of bycatch, particularly on the J Stock, whilst recognising Japan's domestic whaling.

During the intersessional period, a modelling group of Allison, de Moor, Katara, Punt and Wilberg continued the development of the operating models that form the basis of the In-depth Assessment and conducted preliminary fits of

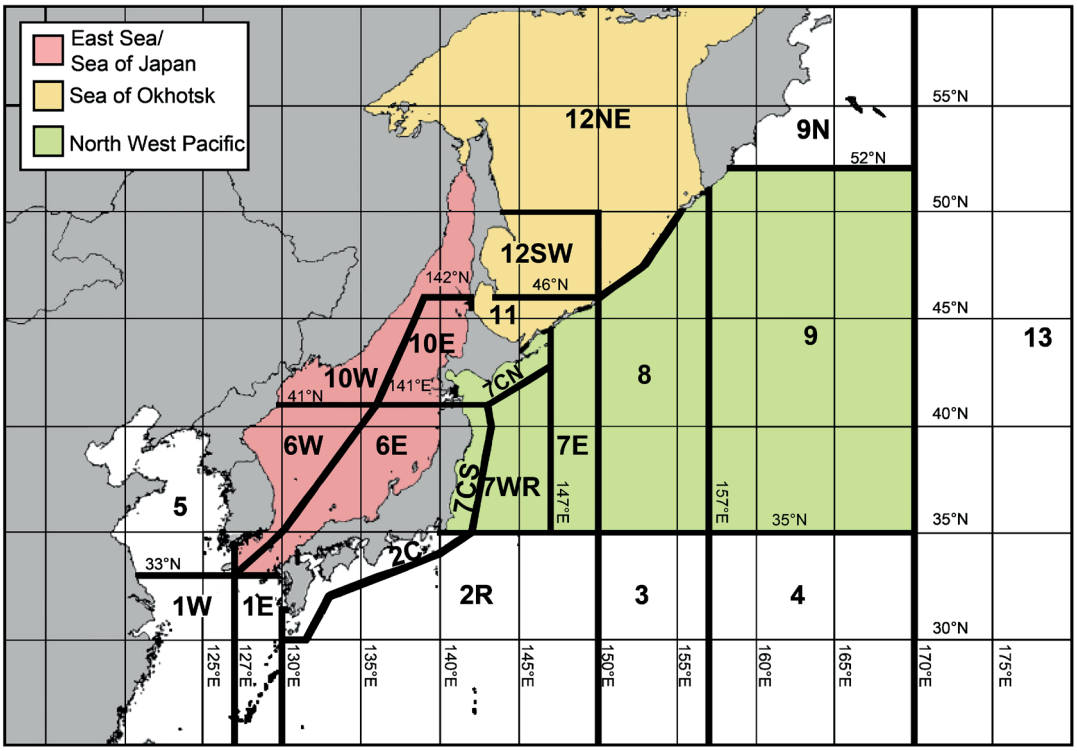

Fig. 4. The 22 sub-areas used in the In-depth Assessment for western North Pacific common minke whales.

base-case versions of these models for each of the three stock hypotheses. The modelling group held two technical meetings during the intersessional period. The work was assisted by a Steering Group, which met virtually with the modelling team. The Committee recognised and expressed appreciation for the considerable work undertaken since the last assessment meeting. The Committee **endorses** the changes agreed by the Steering Group. Discussions revolved around the appropriate dispersal rate between the J and P stocks and between the P and O stocks of hypothesis E; the proportion of P-stock that migrates to sub-areas 12SW and 12NE, where there are no genetic data; and how to split projected catches from future Korean and Japanese bycatch by sub-area. Ways forward were identified, and a work plan was developed.

The Committee noted the computationally intensive workplan and the urgency to complete this In-depth Assessment due to the potential conservation issues of bycatch on the coastal P and J stocks. Because of its importance, the Committee developed proposals with budget implications to conduct one meeting per intersessional year and support researchers to complete the workplan and attend the intersessional meetings. Experience has shown that Secretariat staff cannot handle this workplan alone, so computing support is needed, especially given the recent retirement of an experienced Secretariat staff member in this area.

Attention: SC
The Committee reiterates the need to complete an In-depth Assessment of western North Pacific common minke whales with a focus on bycatch levels and the status of coastal stock(s). To accomplish this, it ***recommends****:*

(1) *Reestablishing a Steering Group under Donovan to advise the technical team including commenting on trial specifications and conditioning results in accordance with the workplan; and*
(2) *Funding the high priority intersessional meetings and computing work needed to complete this assessment.*

8.1.4 In-depth Assessment of Antarctic blue whales

The last assessment of Antarctic blue whales completed by Branch *et al*. (2004) was updated in 2008 (IWC, 2009). The Committee agreed that the population was increasing at a mean rate of 6.4% (95CI: 2.4-8.4%) per annum and, in 1997, the population was estimated to be 0.9% (95% CI: 0.7-1.0%) of pre-exploitation levels. During the present meeting, the Committee reviewed new data on stock structure (Attard *et al*., 2024), abundance, catches (SC/69B/IA/01), demography and assessment model structure (SC/69B/IA/05). The stock structure hypothesis is a single blue whale population feeding in the Antarctic during the austral summer, which is supported by genetics (Attard *et al*., 2024), the presence of a single song type (Širović *et al*., 2018) and extensive movements around the Antarctic (Rand *et al*., in review). The assessment is

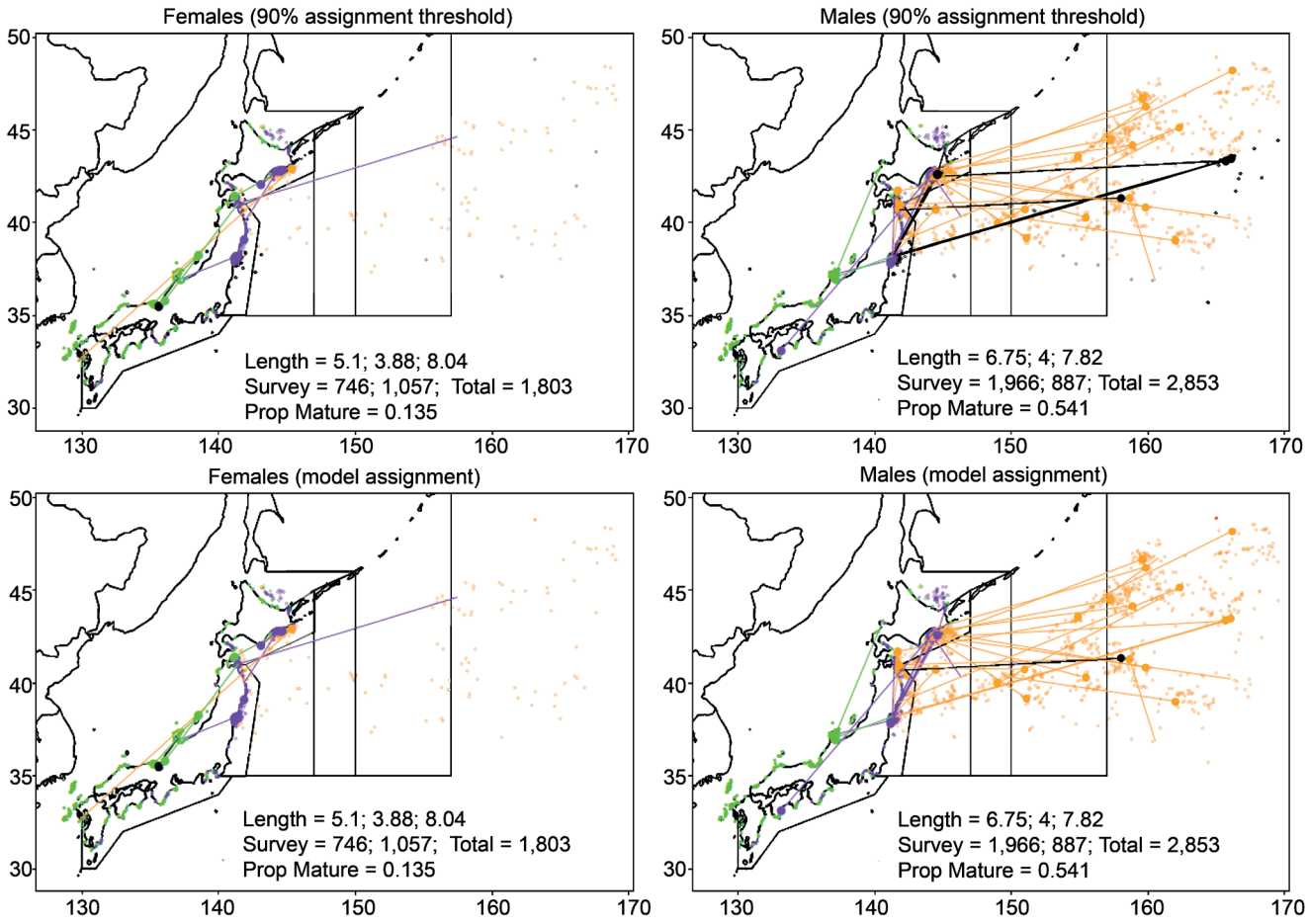

Fig. 5. Locations of the three putative clusters identified by Geneland ('green', 'orange', 'purple') and unassigned animals ('black'). Results are shown by sex, when a 90% threshold is applied as the basis for assignment (upper panels) and when the cluster is assigned based on the most likely assignment. (lower panels) The lines connect parent-offspring pairs, with the colour assigned based on the parent.

based on a theta-logistic population model fit to: (1) absolute abundance estimates from the SOWER and JARPA/JARPA II line-transect surveys; (2) relative abundance estimates based on photo-ID; and (3) a time series of whaling catches. The Committee welcomes this assessment and commends the authors for all the work needed to assemble the abundance estimates, create the catch series, and fit the base case and sensitivity runs. Although the Committee suggested possible modifications related to the input data, model structure and methods to assess the model fit (Annex K, item 5.5), it noted that the work was promising and considered the assessment could be completed by SC70.

Attention: SC

The Committee acknowledges the need to conduct an In-depth Assessment of Antarctic blue whales to update the status of this population that was exploited heavily by whalers. To further progress the assessment and complete it by SC70, it ***recommends****:*

(1) *Establishing an ICG to advise the authors on technical issues;*
(2) *Ensuring abundance estimates used in the assessment are reviewed by ASI, per Committee protocols; and*
(3) *Funding the completion of the assessment.*

8.1.5 Workplan

The Committee has now completed the Comprehensive Assessments of North Pacific sei whales and North Pacific humpback whales, so the workplans related to these assessments are to validate and document the assessments. Excellent progress was made on the In-depth Assessments of western North Pacific minke whales and Antarctic blue whales so the Committee will continue work on these two assessments.

The data for a North Atlantic humpback whale In-depth Assessment will become available intersessionally. Therefore, the Committee **recommends** an In-depth Assessment for this population starts immediately (see Item 6.2). To initiate this In-depth Assessment, the NH, IA and IST Subcommittees developed a proposal for an intersessional workshop to be held during the second intersessional year.

Attention: SC
*The Committee **acknowledges** the need to conduct an In-depth Assessment of North Atlantic humpback whales to inform the IR of the Greenland hunt. In addition, the assessment results will inform the development of an SLA for the St. Vincent and The Grenadines hunt, for completeness, although formally an SLA is not needed to provide management. To initiate the In-depth Assessment of North Atlantic humpback whales, the Committee **recommends**:*

(1) *Establishing a Steering Group under Palka (Convenor) and Donovan (co-Convenor) to collate input data and plan an intersessional workshop that will initiate the In-depth Assessment; and*
(2) *Funding the high priority intersessional meeting to initiate the In-depth Assessment of North Atlantic humpback whales.*

8.2 Potential new assessments: Progress on previous recommendations and prioritised workplans

8.2.1 Non-Antarctic blue whales in the Southern Hemisphere (including NIO populations)

The Committee is preparing for an In-depth Assessment of non-Antarctic Southern Hemisphere blue whales. In the Southern Hemisphere and Indian Ocean, blue whales are primarily distinguished by song-type characteristically heard in their core range. Recognised populations occur in the south-east Pacific Ocean (SEPO) including: (1) Galapagos to Chile; north-west Indian Ocean (NWIO) from Oman to Madagascar, central Indian Ocean (CIO) from Sri Lanka to the southern Indian Ocean; (2) south-west Indian Ocean (SWIO) from Madagascar to Kerguelen Islands; (3) south-east Indian Ocean (SEIO) from Tasmania westward to Indonesia; and (4) south-west Pacific Ocean (SWPO) from New Zealand to Tasmania. The subspecies status for Chilean blue whales is unconfirmed and there is debate about whether northern Indian Ocean blue whales (NWIO and CIO) should be considered pygmy blue whales (*B. m. brevicauda*) or a separate subspecies (*B. m. indica*).

8.2.1.1 Population Structure

In 2023, the Committee recommended the joint consideration of Attard *et al.* (2024) by the SH, NH and SD-DNA Subcommittees, recognising the importance of this work for understanding the stock structure of blue whales (IWC, 2023b, item 8.2.2.1).

Based on a genomic analysis of the largest global blue whale dataset, Attard *et al.* (2024) confirmed the population separation for the SEPO, SEIO and SWPO populations, as well as the suggested subgroup clustering within these populations. However, the limited evidence does not support NIO blue whales as a separate subspecies from SEIO and SWPO pygmy blue whale populations. Moreover, the low level of divergence detected between the NEPO and SEPO suggests some gene flow across the equator in the eastern Pacific, casting doubt on the subspecies taxonomy of eastern Pacific blue whales.

The Committee **welcomes** this comprehensive genetic analysis, highlighting its value for the ongoing pre-assessment.

Attention: SC, R
*Noting the data paucity for specific regions, the Committee **encourages** the collection and genetic analysis of blue whale biopsy samples from:*

(1) *The non-Antarctic South Atlantic, including the coasts off Brazil and the islands at 54°-55°S, 36°-38°W to inform about the population identity of blue whales in this area, which are currently believed to be Antarctic blue whales;*
(2) *The NIO (i.e., Oman, Sri Lanka, India) to determine the population and subspecific status of the NWIO and CIO populations; and*
(3) *The SWIO to inform about pygmy blue whales in co-occurrence with Antarctic blue whales, as suggested by catch* data.

8.2.1.2 Acoustic Studies

The Committee received a report investigating the acoustic behaviour of different baleen whale species, which can be divided into 'fight' and 'flight' species based on their reactions to killer whale attacks (SC/69B/SH/04). The review showed five out of six 'fight' species call at higher frequencies and with high source levels and can be heard by killer whales from at least 100km. Six out of eight flight (or likely flight) species, including blue whales, call with some combination of low frequencies or low source levels, such that they are either acoustically invisible to killer whales or can only be heard by those nearby (<10km). The Committee **welcomes** these results, however notes that a more sophisticated analysis examines both intensity and frequency across the range of calls would produce more accurate estimates of the distances over which killer whales can hear the calls of different baleen whale species.

8.2.1.3 Pygmy-Type Blue Whales

Pygmy-type blue whales were discussed by recognised population.

8.2.1.3.1 Southeast Indian Ocean

The Committee received new data on blue whales from the waters off Timor Leste, particularly the Ombai-Wetar Strait, where pygmy blue whales migrate from Indonesian waters to Australian and other southern summer feeding regions. At peak times during the southbound migration, daytime sightings of individual pygmy blue whales averaged 15-20 individuals per day, and during 2020-23 there were 356-486 sightings annually. Many cow-calf pairs, suckling and courtship behaviour have been observed and videoed. At the narrowest point of the Ombai-Wetar Strait (25km), blue whales pass very close

to shore. From 2016-22, 250 photo-ID records were obtained. The main threats to these whales in this region are: (1) ship strikes, due to the migration pathway passing through the centre of the busy shipping port of Dili; and (2) a rapidly growing whale watching and swim-with-whales industry.

The Committee **welcomes** the valuable new information from Timor Leste. The Committee notes the potential of Timor Leste for shore-based abundance estimation using methods similar to those used for ENP gray whales. Deployment of hydrophones could allow for acoustic abundance estimation when combined with visual observations, especially in the narrow strait between Dili and Atauro Island. The Committee gratefully acknowledges that most photo-ID data have already been submitted to the Southern Hemisphere Blue Whale Catalogue (SHBWC).

Attention: R
*The Committee **encourages** the ongoing submission of blue whale photo-ID data from regional photo-ID collection holders in Timor Leste to the Southern Hemisphere Blue Whale Catalogue.*

Furthermore, the Committee expresses concern regarding the growth in whale watching and swim-with activities in Timor Leste. For more details, refer to Annex R, item 3.3, for a discussion of regulations in this country.

New information on possible pygmy blue whale sightings between Australia and Indonesia during the mid-1800s by British and American open-boat whalers was presented (SC/69B/SH/07). During the whalers' search for sperm whales, they recorded all rorquals as 'finbacks'. The majority of the 123 'finback' sightings extracted from whaling logbooks of 11 voyages by American and British whalers align with modern satellite tag data of blue whales (e.g., Double *et al*., 2014) showing a migratory route between Australia and Indonesia passing through the Ombai-Wetar Strait, north of Timor Leste, and including sightings in the Molucca Sea. The 'finback' sightings, if considered to be pygmy blue whales, extend the monthly presence and geographic range of this species in the Australian-Indonesian region.

8.2.1.3.2 Southwest Indian Ocean

The Committee received new acoustic information regarding blue whales off western Madagascar in the Mozambique Channel from passive acoustic recorders deployed at three sites spread along approximately 1,400km of coast, between December 2016 and August 2021 (SC/69B/SH/18). Temporal presence of Antarctic blue whale song suggested a winter breeding season aggregation and greater prevalence in the southern Mozambique Channel. SWIO pygmy blue whale song was present bimodally in late autumn and late spring, suggesting a migratory corridor between summer feeding and winter breeding habitat south and north of Madagascar, respectively. CIO and NWIO blue whale song types were detected infrequently off the most northern site, but more extensively at the central site, indicating these populations range into the Mozambique Channel, but with lower rates of occurrence than the other blue whale populations.

The Committee **welcomes** this information and acknowledges the importance of acoustic analysis for separating blue whale populations in the region. The results may have implications for catch separation of pygmy blue whale populations in the Indian Ocean. Previously, catches from the north of Madagascar to the equator had been allocated to the NWIO and CIO populations and not the SWIO population as proposed by SC/69B/SH/18. However, new recordings from the offshore equatorial region of the Seychelles detected only CIO, not SWIO song (Stafford *et al*., 2023).

Attention: SC, R
*The Committee **recommends** the collection of passive acoustics data from offshore Kenya to resolve whether catches in these equatorial waters in Kenya and west of the Seychelles were SWIO blue whales or CIO/NWIO blue whales.*

The Committee received an update on IWC-SORP funded passive acoustic research off Durban, South Africa. Durban catches during the 1900s are a key uncertainty in the catch history hampering attempts to separate Antarctic blue whale and SWIO catches, and acoustic data could potentially reduce uncertainty. A hydrophone will be deployed this year, and the Committee looks forward to receiving an update at SC70.

8.2.1.3.3 Central Indian Ocean

The Committee reviewed an abundance estimate for Sri Lankan blue whales by Liyanage *et al*. (2022) and considered this abundance estimate to be 'Not Suitable' for use in assessments of population status, due to concerns relating to the survey set-up and design (Annex D, item 2.1.2). The Committee notes that no accepted abundance estimates are available for this population of blue whales.

Attention: SC, R
*The Committee **encourages** collection of photo-ID data from the CIO (i.e., Sri Lanka) and submission of existing photo-ID data from Sri Lanka to the Southern Hemisphere Blue Whale Catalogue (SHBWC) for future use in mark-recapture analyses that can inform abundance estimates for the CIO population, for which no estimates currently exist.*

8.2.1.4 Progress on Population Assessment

IWC-funded analysis of capture-recapture data for SEPO (Chile) and SEIO (Australia) blue whale populations was initiated in 2023-24. Preliminary results for the abundance of Chilean blue whales on two feeding grounds, the southern site at Isla Grande de Chiloé (42°S) and the northern site at Isla Chañaral (29°S), were welcomed (SC/69B/SH/16). Preliminary estimates suggest that the number of animals feeding at the southern site experienced a significant decline of around 3% per annum during 2004-17, i.e., a decline of 36% over this 14-year period. The number of animals feeding at the northern site appeared roughly stable or to slightly increase. The Committee was informed that additional Chilean capture-recapture data from the southern feeding ground for 2016 and 2017 have become available. These data may refine the model by adding to the capture histories at the end of the time series. The Committee looks forward to receiving the updated results of the capture-recapture analysis at SC70.

Attention: SC, R
*Given the concerning potential decline in the number of Chilean blue whales in the southern feeding ground, the Committee **recommends** the collation, reconciliation and inclusion of additional available photo-ID data from 2016 and 2017 in the mark-recapture analysis (SC/69B/SH/16) by the end of 2024, to refine model results for presentation at SC70.*

Attention: SC, R
*The Committee **expresses concern** about the putative 36% decline in the number of Chilean blue whales in the southern feeding ground (Isla Grande de Chiloé (42°S)) over the past 14 years. To determine if this decline in numbers reflects a true population decline or can alternatively be explained by Chilean blue whales in the southern feeding grounds moving to areas further offshore, the Committee **encourages** broader-scale sighting surveys and passive acoustic monitoring in the southern feeding ground.*

In preparation for the In-depth Assessment of non-Antarctic Southern Hemisphere blue whales, the Committee has supported ongoing work in compiling the SHBWC and identifying re-sightings that can be used in mark-recapture analysis of abundance (SC/69B/SH/01). The SHBWC currently comprises 2,697 individual blue whale photo-IDs that include regions off Antarctica, Chile, Peru, Ecuador-Galapagos, Eastern Tropical Pacific (ETP), Australia, Timor-Leste, New Zealand, southern Africa, Madagascar and Sri Lanka. In 2023, the Chilean datasets were finalised and are currently being used for modelling abundance estimates. Photo-ID comparisons for the SEIO (Australian) population were subsequently prioritised and left and right-side comparisons completed.

The Committee notes the timely commencement of the mark-recapture analysis reported in SC/69B/SH/16. The SHBWC is a long-term initiative financially supported by the Committee's research budget to deliver regional photo-ID-based capture-recapture estimates of blue whale abundance and that the work presented addressed recommendations made previously by the IWC (completion of matching of SEPO and SEIO; IWC, 2023b; item 8.2.1.4).

Attention: SC, R
*In order to complete pre-assessments of Southern Hemisphere non-Antarctic blue whales, the Committee **recommends** that development of the SHBWC should continue, in order of priority, with:*

(1) *Inclusion (matching and quality control) of additional 2016 and 2017 SEPO data;*
(2) *Meta data checking of SEIO (Australia) data; and*
(3) *Matching and quality control of Timor Leste datasets.*

The Committee:

(1) ***Recommends** the continued intersessional mark-recapture analysis of the SEPO, followed by analysis of the SEIO and SWPO blue whale datasets;*
(2) ***Recommends** the addition of Timor Leste data in the SEIO analyses when matching will have been completed; and*
(3) ***Encourages** submission of new photo-IDs from the Central Indian Ocean, southwest Indian Ocean and northwest Indian Ocean areas to the SHBWC, to support future mark-recapture analyses of regional abundance.*

Worldwide, the proportion of cow-calf pairs sighted in blue whale populations averages only 2.3% (95% CI = 2.0-2.6%) of sighted individuals, despite pregnancy data suggesting that 33-50% of mature females produce a calf every year. The Committee received a report on a timing hypothesis explaining that these 'missing calves' are likely due to peak calving occurring immediately after pregnant females leave their summer feeding grounds (where the highest sightings effort occurs) and peak weaning on or before their return. Thus, calves may not be seen during sightings surveys that are mainly conducted in feeding grounds (SC/69B/SH/08).

8.2.2 Southern Hemisphere right whales not the subject of CMPs

In 2016, the Committee agreed to commence gathering pre-assessment information for a regional In-depth Assessment of southern right whales (SRWs) (IWC, 2017, item 10.8.1.5). This year the Committee was provided with updates on

regional population trends, habitat use, foraging ecology, health and offshore distributions, which will inform the In-depth assessment of the species across its range in the Southern Hemisphere.

The Committee **welcomes** an update on intersessional work to develop a global, standardised IWC-endorsed visual health assessment protocol for SRWs (SC/69B/SH/02). Substantial progress was made updating the protocol and trialling the methods therein using South African and Australian long-term, photo-ID datasets. Considering the growing importance of photogrammetry datasets that allow for quantitative assessments of body condition, the objectives of the visual health assessment protocol were reconsidered. The Committee notes that a population (rather than individual) level health assessment is encouraged to document baseline visual heath indices and facilitate cross-region comparison, for detection of changes over time. The Committee **agrees** to continue the ICG established in 2021.

Attention: SC, R
*The Committee **recommends** the finalisation of a global, standardised, IWC-endorsed visual health assessment protocol to assist a synoptic assessment of southern right whale population health across calving grounds, for presentation at SC70.*

8.2.2.1 New Zealand

The Committee received updates regarding SRW research in New Zealand conducted under the auspices of IWC-SORP (SC/69B/SH/05 and SC/69B/SH/06). The Committee **encourages** the continuation of efforts to better understand SRW offshore movements and foraging ecology, and additions to the existing time-series of genetic and photo-ID mark-recapture data for population assessments, relevant to the global In-depth Assessment of this priority species.

8.2.2.2 South Africa

The Committee **welcomes** the results of the 2023 survey of SRWs flown along the coast of South Africa, part of a long-term monitoring programme since 1979 (SC/69B/SH/03). The Committee notes that the data continue the trend of extreme fluctuations in the prevalence of cow-calf pairs along the coast since 2015, likely because of increased calving intervals, and the consistently low number of unaccompanied adults observed due to altered migration patterns. The Committee **reiterates** the importance of these long-term data series for population assessment.

The Committee received information about an assessment of temporal variability in environmental variables (chlorophyll and sea-ice concentrations) and their influence on prey (Antarctic krill) availability in the foraging grounds of the South African SRW population (Germishuizen *et al*., in review). The Committee notes the influence of declining prey habitat quality on the demographic and migratory behaviour changes observed off South Africa since 2010 and highlights the vulnerability of this SRW population to climate change.

8.2.2.3 Australian Right Whales

The Committee **welcomes** information describing trends in the relative abundance of Australian SRW populations over the period 1999-2022 and implications for management (O'Shannessy *et al*., in review). Australian SRW population increases are driving their return to historically important habitat and biologically important areas. The authors suggested that measures are required to ensure that suitable habitat, connective migration corridors, and these emerging aggregation areas are managed, to ensure that these populations continue to increase.

The Committee also **welcomes** the findings of a long-term, shore-based population monitoring study of the primary calving grounds at the Head of the Great Australian Bight, South Australia, over the period 1991-2023 (O'Shannessy *et al*., 2023). The Committee notes that the lowest counts of SRWs since 1993 were recorded, as well as the continuing high inter-annual variation in long-term relative abundance trends and high fluctuations in apparent mean calving intervals. The Committee **encourages** the continuation of long-term monitoring to understand abundance trends and movement patterns, and to inform regional and global population assessments.

Attention: SC, R, CG
*Recognising the great value of the data collected in increasing understanding of abundance, trends and movement patterns, and for informing regional and global population assessments, the Committee **recommends** that long-term aerial and land-based surveys in Australia continue.*

The Committee reviewed an abundance estimate for the Australian southeastern SRW population (Stamation *et al*., 2020) and concluded this estimate is 'Not Suitable' for use in assessments of population status (SC/69B/REP/07) but would welcome an improved analysis for this small stock (see Annex D).

The Committee received the results of telemetry work off Australia in 2023 and 2024 (SC/69B/SH/15). A total of 14 transdermal satellite tags deployed on adult SRWs indicated likely foraging locations off the Crozet Islands, Kerguelen Islands, Antarctica, and the Subtropical Front.

Attention: SC, R
*The Committee **recommends** the continuation of wide-scale satellite telemetry studies on southern right whales, and the related spatio-temporal analyses, to better understand population connectivity on offshore foraging grounds and inform catch allocation hypotheses, that are required for regional and global population assessments.*

8.2.2.4 Offshore Areas

Passive Acoustic Monitoring (PAM) is becoming increasingly important for studying cetaceans' acoustic behaviour and provides a source of continuous, long-term and seasonally unbiased data. The Committee **welcomes** the update provided on intersessional work to assess the availability of existing offshore and high latitude passive acoustic monitoring data to assist in determining offshore SRW distribution (SC/69B/SH/13). Progress was made assembling a training dataset that will be used for the development of automated detectors of SRW calls.

Attention: SC, R
The Committee:

(1) ***Agrees** to continue the southern right whale acoustics ICG; and*
(2) ***Recommends** further work to finalise the development of a training dataset and an automated detection system for southern right whale calls, for application in broad-scale, passive acoustic studies to assess spatial and temporal patterns of southern right whale acoustics south of 40°S, for report at SC70.*

The Committee **welcomes** efforts to increase the efficacy of PAM methods to accurately distinguish SRW upcalls from humpback whale vocalisations (Wöhle *et al*., 2023). Comparison of call features, particularly slope and bandwidth measurements, with confirmed vocalisations of SRWs from Argentina and humpback whales from the Atlantic Sector of the Southern Ocean allowed successful attribution of the Elephant Island upcalls to SRWs. The Committee notes the importance of this development for use in the analysis of archived and future acoustic data to assess SRW presence, distribution and behaviour.

The Committee received information suggesting recolonisation of the waters around the Crozet Islands by right whales. This area may represent an important, contemporary, mid-latitude foraging ground, with known connections to the South African and Australian calving grounds (SC/69B/SH/12). Given the potential implications of population mixing, the Committee **encourages** further research in this area. The Committee notes that other baleen whale species, including humpback whales, could also benefit from similar dedicated research efforts.

Attention: SC, R
*The Committee **encourages** dedicated research (e.g., telemetry studies, photogrammetry, biopsy sampling for genetic and endocrine analyses) on southern right whales in the Crozet Islands, to further the work on the species' foraging ecology and population demographics in response to climate change, under IWC-SORP Theme 6.*

The Committee received information about visual and acoustic surveys of south right whales and other baleen whales around the sub-Antarctic island at 54°15'S 36°45'W, between April and September in 2022 and 2023 (SC/69B/SAN/01 and Annex N). Southern right whale sightings were made, photo-IDs collected and calls detected, in both years. Analyses of collected data are ongoing to relate observed distributions of whales to krill occurrence and density with a view to informing management measures. The Committee invites updates at SC70.

8.2.2.5 Progress on Population Assessment

The Committee recognises the need for a consistent approach to modelling SRW population demographics to enable species assessments across Southern Hemisphere wintering populations. It therefore **welcomes** an update on progress toward the development of a photo-ID-based 'common' demographic model, as well as preliminary estimates of demographic parameters for SRWs off Australia generated by applying the model and subsequent comparison to other regions.

Attention: SC, R, CG
*The Committee **commends** this highly collaborative, multi-year effort. To progress population assessments of southern right whales the Committee reiterates (SC1965, SC2087, SC21102, SC2327) the importance of continuing long-term monitoring programmes to understand right whale population trends and dynamics, and **recommends** that:*

(1) *Photo-ID monitoring continues for all SH wintering grounds where long-term datasets currently exist;*
(2) *Resulting photo-ID data are processed in a timely manner and reconciled within each wintering ground. To facilitate this, the development and adoption of an AI based identification and matching system is strongly **encouraged;***
(3) *Continued progress is made with in-depth regional population assessments; and*
(4) *The finalised common modelling framework is applied to all available regional long-term datasets (South Africa, Argentina/Brazil, and South Australia), to assess southern right whale population parameters on a consistent hemisphere-wide scale.*

Immediately prior to SC69B, scientists and historians participated in a pre-meeting to: (1) review the historic catch datasets produced at previous IWC meetings; (2) compile these into the existing SRW catch series; and (3) identify uncertainties and/or new available data to inform further revisions (SC/69B/REP/05). The pre-meeting concluded that there are knowledge gaps in the current global SRW catch series and made recommendations on ways forward to compile a revised catch series using the identified new data sources, in addition to revised approaches to conversions and struck and lost ratios. Two regional catch datasets, used in prior assessments, were identified to have higher confidence: (1) the West Pacific Ocean (Jackson *et al*., 2016); and (2) Southwest Atlantic (Romero *et al*., 2022). Further review of these datasets will be advanced as a priority for regional In-Depth Assessments. An ICG was established to progress this work intersessionally and will report to SC70.

8.2.3 North Pacific blue whales

Blue whales in the North Pacific are generally considered to comprise two populations: the eastern North Pacific (ENP population), and the central and western North Pacific (CWNP population). In 2016, the Committee assessed the ENP population as 'almost recovered' (IWC, 2017a) and has been evaluating the data available to assess blue whales in the less studied central and western North Pacific. Additional details and discussion can be found in Annex M, item 2.1.

Attention: SC
The Committee continues its work to assess blue whales in the North Pacific, especially in the central and western areas. It reiterates that an abundance estimate for CWNP Pacific blue whales using data from IWC-POWER and JARPN/JARPNII surveys is critical for the assessment (IWC, 2019a; IWC, 2023a) and recommends that abundance estimates become available prior to the SC70 meeting in order to be reviewed intersessionally in preparation for an In-depth Assessment.

8.2.4 North Atlantic right whales

In response to a request last year (IWC, 2023b), the USA provided an update regarding North Atlantic right whale population status and management initiatives (SC/69B/NH/01 and SC/69B/NH/03). This population continues to decline, with a median total abundance estimated at 356 individuals (95% credible interval 346-353) at the end of 2022. The sex ratio is becoming increasingly male-biased, with only 147 (95% credible interval: 140-153) females estimated to remain in the population during 2022. A total of 34 deaths were documented between 2017-21, of which nine were attributed to entanglement and 11 to vessel strike. Since the start of 2022, another six deaths have been detected in US waters, including one calf that died following a vessel strike. Fewer than 70 reproductively active females are estimated to be likely alive. A population viability analysis tool was developed to examine the role of various threats to species extinction risk (Runge *et al*., 2023). Results indicated a high risk of extinction (0.93) under the status quo demographic rates that were observed during 2013-19, a period of high mortality. Eliminating entanglements or vessel strikes entirely reduced extinction probabilities to 0.05 and 0.34, respectively, highlighting the significant roles of these threats to current extinction risk.

The UME, declared in 2017, is ongoing and totalled 126 individuals (40 deaths, 34 serious injuries and 52 morbidities) as of April 2024. NOAA Fisheries established an internal North Atlantic Right Whale Health Assessment Implementation Working Group to build an integrated health assessment program to leverage current and cutting-edge techniques for population monitoring and management as well as to address critical knowledge gaps. Efforts continue to mitigate impacts from entanglements and ship strikes. With regard to entanglement, the US continues to invest heavily in the development of innovative fishing gear technologies, such as on-demand gear that eliminates persistent vertical buoy lines (SC/69B/HIM/02). NOAA's proposal to change speed regulations to reduce vessel strike risk garnered over 90,000 public comments; final action is under review by the US government. NOAA convened a North Atlantic right whale Vessel Strike Risk Reduction Technology Workshop to explore and promote new technologies to reduce the risk of vessel strikes, as they investigate options to foster research, development, testing and operationalisation of innovative tools and management practices.

Extensive collaboration continues between the USA and Canada to improve the transboundary understanding of North Atlantic right whale distribution, and the Committee has previously encouraged research on movement and habitat use within and outside of the currently known range of this species (IWC, 2022a, item 8.2.6). Satellite tagging is a tool that has been used to address such questions in other populations of management concern. In September 2023, NOAA Fisheries co-hosted a North Atlantic right whale tagging workshop with the US Marine Mammal Commission and US Navy, in coordination with Fisheries and Oceans Canada to review the best available science in order to help stakeholders to evaluate the feasibility and risk of using satellite telemetry techniques on North Atlantic right whales (Marine Mammal Commission, 2024). Work is underway to review the effects of historical tagging on this species and to develop criteria for potentially selecting tagging candidates if such research is approved.

The Committee's discussion of North Atlantic right whale population status, as well as research and management efforts can be found in Annex M, item 2.2.

Attention: SC, CG, G, R, S

*The Committee **strongly reiterates** its serious concern over the status of North Atlantic right whales given its concerning population demographics and decline, and the urgent need for both the USA and Canada to eliminate human-caused North Atlantic right whale mortality (IWC, 2021, item 9.2.7; IWC, 2023a, item 8.2.6) and:*

(1) ***Recognises** that ship strikes and entanglement in fishing gear are the two major causes of North Atlantic right whale mortality (IWC, 2021, item 8.2.6) and strongly supports efforts to reduce these;*
(2) ***Agrees** that new modelling evidence supports long-held scientific understanding that eliminating these impacts could reverse the risk of species extinction;*
(3) ***Strongly recommends** accelerated efforts to develop, test and adopt methods of fishing that reduce the potential to entangle right whales (IWC, 2023a, item 8.2.6);*
(4) ***Strongly encourages** the United States and Canada to urgently incentivise the use of whale-safe fishing gear including by subsidising the acquisition of such gear and expeditiously authorising the use of such gear;*
(5) ***Encourages** continued updates from the USA on its research and management efforts and their outcomes;*
(6) ***Encourages** a study on Type-C satellite tagging research that explores the potential conservation benefits for North Atlantic right whales based on what has been learned by tagging other endangered large whale species;*
(7) ***Encourages** the Secretariat to invite a representative from Canada to SC70 to present on their NARW research and management initiatives, including the use of uncrewed aerial systems surveys and compliance to vessel speed restrictions;*
(8) ***Recommends** that all stakeholders share detections of North Atlantic right whales from outside their known range to the Right Whale Consortium; and*
(9) ***Expresses concern** about lack of funding to stranding networks to obtain data needed to understand whale deaths and recommends that government resources be allocated to continue collecting this important information.*

8.2.5 North Atlantic humpback whales

A Comprehensive Assessment of North Atlantic humpback whales was completed in 2002 (IWC, 2002; 2003). In 2018, the Committee agreed that it was timely to consider a range-wide In-depth Assessment (IWC, 2019a, item 8.8) and has since been collecting and evaluating available data. An intersessional email group has since been collecting and evaluating available data for the purpose of assessing the North Atlantic humpback whale population in order to initiate an assessment. Details of the Committee's discussion of this topic can be found in Annex M, item 2.3, as well as under Items 7.1.7 and 21.2.7.

Due to time constraints in SC69B, the majority of new information on North Atlantic humpback whales was referred to the intersessional group. However, the Committee received updated results of a current passive acoustic monitoring study being conducted off Dakar, Senegal. Humpback whale song has thus far been detected at this location in both the boreal and austral winters, suggesting use of this region by individuals from both the Northern and Southern Hemispheres. This has relevance for understanding the breeding range of humpback whales in the eastern North Atlantic. More information on this topic can be found in Annex M, item 2.3.

Attention: C , CG, SC, R

*The Committee continues to collect and evaluate information relevant to an In-depth Assessment of North Atlantic humpback whales. It particularly **reiterates** the following previous **recommendations** (IWC, 2019a, item 8.8; 2020, item 9.2.9; 2021, items 6.4 and 8.1.4; 2022a, item 8.2.7; 2023a, item 8.2.7; 2023b, item 8.2.7) to:*

(1) *Conduct an intersessional in-person workshop in late 2024 to early 2025 examing available information in the context of assessment; and*
(2) *Work with the IST and IA Subcommittees to develop plans for an in-person workshop in early 2026 to initiate the In-depth Assessment.*

8.2.6 Rice's whales

The Rice's whale (Rosel *et al*., 2021) is the only year-round resident baleen whale in the Gulf of Mexico, with an estimated population size of only about 50 animals (Garrison *et al*., 2020). The Committee has previously expressed serious concern about this stock (IWC, 2022a, item 8.2.8; IWC, 2023a, item 8.2.8).

The Committee discussed the results of recent assessment surveys, passive acoustic monitoring, and additional research aimed at improving the understanding of Rice's whale spatial distribution and habitat use, particularly in the central and western Gulf of Mexico (SC/69B/NH/05). Both aerial surveys and passive acoustic data collected off the US coast of Texas have demonstrated that animals regularly use that habitat. In addition, passive acoustic data confirmed Rice's whale presence in Mexican waters for the first time. Ongoing research is focused on improving understanding of distribution, habitat use, foraging ecology and behaviour. The US National Marine Fisheries Service has proposed to establish Critical

Habitat for Rice's whales, is in the process of developing conservation and recovery plans for the species and has recently included Rice's whale in the 'Species in the Spotlight' programme. The Committee mentioned that Rice's whale would be a candidate for the IWC Extinction Initiative, and ASI identified this species as a priority assessment for the Status of the Stocks Initiative.

Discussion also focused on the difficulty of visually distinguishing Rice's whales from the other medium-sized baleen whales that occur off the US eastern seaboard and in the waters of the northern Gulf of Mexico. SC/69B/NH/04 reviewed the species identification of 67 strandings of Rice's, Bryde's (*B. edeni*) and sei whales (*B. borealis*) between 1919-2023. Twelve stranded Rice's whales have been genetically confirmed; eight from the Gulf of Mexico and four from the US eastern seaboard, from Florida to Virginia. Several of these had previously been mis-identified as Bryde's whales. Genetic investigations are needed for all Bryde's-like whales to accurately confirm species identification.

Additional details and discussion about Rice's whale can be found in Annex M, item 3.4.

Attention: CG, C, SC, CC

*The Committee **reiterates** its serious concern about Rice's whales, an isolated population in the Gulf of Mexico with an estimated abundance of only around 50 animals (IWC, 2019a, Item 9.3.9; 2020, Item 9.3.1; 2021, Item 8.2.7; 2022a, Item 8.2.8; 2023a, Item 8.2.8; 2023b, Item 8.2.8) and **recognises** the substantial amount of work that has been conducted by the USA on research and management initiatives over the last year. It welcomes additional updates at SC70.*

Specifically, the Committee:

(1) ***Reiterates** previous recommendations for the US to use all available legal and regulatory tools to provide maximum protection for this species (IWC, 2023b, Item 8.2.8);*
(2) ***Recommends** the genetics of all historic Bryde's-like whale samples be examined, including a historic balaenopterid specimen from the coast of Campeche, Mexico, to confirm species identification;*
(3) ***Recommends** extending the predictions of an existing Gulf of Mexico predictive habitat model to include areas along the east coast of the USA; and*
(4) ***Encourages** publications on the external morphology of both live and stranded Rice's whales to facilitate accurate visual identifications.*

8.3 New information for other northern stocks

8.3.1 Unusual Morality Events affecting northern stocks

Since 2016, there have been three concurrent UME events involving humpback whales (2016-present), North Atlantic right whales (2017-present), and minke whales (2017-present) in the North Atlantic Ocean along the coast of Canada and the United States. To date, over 512 whales are included as part of these UMEs: 220 humpback; 126 North Atlantic right; and 166 minke whales. Recently, there has been strong public interest in large whale strandings, particularly in the US mid-Atlantic Bight region, related to concerns about offshore wind development. However, there is no evidence that offshore wind development activities are linked to any recent large whale mortalities. Further discussion on the UMEs and wind farm development activities can be found, respectively, in Annex M, item 3.1, and Annex G, items 5.1, 5.2.

8.3.2 North Atlantic common minke whale

Minke whales encountered in the North Atlantic are expected to be *B. acutorostrata*. However, Bolanos-Jimenez and Gutierrez (2024) reviewed four confirmed detections of Antarctic minke whales (*B. bonaerensis*) in the North Atlantic. The Committee highlighted the importance of robust species identification, including when investigating the ongoing UME event (see item 8.3.1), given this evidence of trans-equatorial movements. More information can be found in Annex M, item 3.2.

8.3.3 North Pacific right whales

Two genetically distinct populations of North Pacific right whales (NPRW) are currently recognised; the eastern stock occurs in the Gulf of Alaska, Bering Sea, the waters off Hawaii and the west coast of North America, and the western stock inhabits water off and around China, Japan, Korea and Russia, including the Sea of Okhotsk. The most recent estimate of abundance for the eastern population is approximately 30 individuals as of 2008, and there is no reliable population estimate for the western population, currently thought to range between 400 and 1,100 animals.

The Committee received new information from stable isotope analyses of baleen plates, providing the first insights into possible historical migratory patterns of NPRW. Results showed evidence of year-round feeding and suggested that the California current and waters to the south were an important historical habitat.

The Committee also received information on North Pacific right whales sighted outside the designated Critical Habitat area during the IWC-POWER cruise. Additional details and discussion on North Pacific right whales can be found in Annex M, item 3.4.

Attention: SC, CG, R
Recognising that, with an estimated abundance of ~30 animals, the eastern North Pacific right whale population is considered one of the most endangered populations in the world, the Committee:

(1) ***Agrees*** *that the IWC-POWER cruises provide an important platform for obtaining detections, photos and genetic data of North Pacific right whales, and* ***recommends*** *this work continues;*
(2) ***Reiterates*** *the importance of collaboration with the Russian Federation and Japan to increase the number and demographic composition of North Pacific right whale baleen plates to be used in stable isotope analyses, particularly for females and individuals from the western stock; and*
(3) ***Recommends*** *using passive acoustic monitoring along the US west coast to monitor North Pacific right whales in waters identified as historically important areas.*

8.3.4 North Pacific sperm whales

In 2003, the Scientific Committee agreed to evaluate the possibility of conducting an In-Depth Assessment of sperm whales (IWC, 2003; 2004). Updates were most recently provided in 2007 (IWC, 2008), 2016 (IWC, 2017a) and 2017 (IWC, 2018a).

This year, the Committee revisited the feasibility of undertaking a future assessment of sperm whales in the eastern North Pacific/California Current. SC/69B/NH/02 reviewed new data related to sperm whale population structure, abundance, and removals, particularly in the eastern North Pacific, as well as information available on distribution, movements, photo-ID, acoustics and diet studies. The Committee agreed to form an Intersessional Correspondence Group to collaborate with Cachalote Consortium researchers to support a potential future assessment.

Attention: SC, CG, R
Recognising that it has been almost 20 years since the last effort to assess the status of North Pacific sperm whales, the Committee:

(1) ***Agrees*** *to establish an intersessional correspondence group to begin assessing available data for a North Pacific sperm whale assessment; and*
(2) ***Encourages*** *the IWC-ICG to report any progress at SC70.*

The Committee also received information on sperm whale sightings in the eastern North Pacific high seas and the western North Pacific from an IWC-POWER cruise (SC/69B/ASI/05) and a Japanese dedicated cetacean sighting survey (SC/69B/ASI/09).

Attention: SC, CG, R
The Committee ***agrees*** *that both the IWC-POWER cruise and Japanese dedicated cetacean sighting survey provide important information on distribution and abundance of many species, including sperm whales, and* ***encourages*** *future reporting of data collected on these surveys.*

Finally, the Committee received information on plans for a new program to deploy satellite telemetry tags on large cetaceans in Korean waters. Sperm whales could be tagged as part of this research, but minke whales are anticipated to be the initial target species. The Committee's discussion of these research plans focused primarily on tagging methods, including best practice guidelines and new information available from tag impact studies (see item 8.2.4).

Attention: SC, CG, R
With respect to the development of new satellite telemetry programmes, the Committee:

(1) ***Strongly recommends*** *that any new projects follow the best practice guidelines for tagging (Andrews et al., 2019) endorsed by the Committee;*
(2) ***Recommends*** *photographic documentation of the tagged individual and the tag implantation site for as long as reasonably possible to assess potential health impacts to tagged whales; and*
(3) ***Recommends*** *collaboration with researchers with experience in tagging large whales to maximise success.*

8.3.5 Okhotsk Sea bowhead whales

The Committee was advised that an updated analysis of abundance and trends is underway for Okhotsk Sea bowhead whales. See Annex M, item 3.5 for additional details.

8.4 New information for other Southern stocks

The Committee **welcomes** the results of the 2023-24 JASS-A sighting survey programme (SC/69B/ASI/04), conducted in the western part of Area IV West (70°E-100°E; south of 60°S). Fifteen schools (18 individuals) of Antarctic blue whales were observed, 15 individuals were photographed, and eight individual biopsy samples were collected. A total of 200 schools

(467 individuals) of fin whales were observed and nine individual biopsy samples were collected. On the return transit, four schools (five individuals) of SRWs were observed off southwestern Australia (40°S-45°S), five individual photo-IDs, and four individual biopsy samples were collected. These data will be analysed intersessionally to provide abundance estimates and support stock structure studies at the Institute of Cetacean Research, Japan. The Committee thanks the authors and **encourages** them to present the results of these analyses at SC70.

The Committee **welcomes** evidence of Antarctic minke whale occurrence and migratory routes in the Southwest Atlantic Ocean (SC/69B/SH/10). Between June and December in the period 2015-23, 17 sightings of Antarctic minke whales were recorded off the coast of Brazil. In addition, six Antarctic minke whales were satellite tagged, providing the first documentation of migratory movements outside the Antarctic feeding grounds. The Committee congratulates the team on their success in sampling and tagging this species and **encourages** them to explore collaborations with the wider Committee and IWC-SORP researchers to facilitate future work in the Antarctic.

The Committee supports the establishment of an ICG to facilitate ongoing two-way collaboration between the IWC and CCAMLR, for further information see SC/69B/EM/03; Annex H, item 4.2 and appendix 2).

8.5 Progress on previous recommendations

Previous recommendations were reviewed and updated.

8.6 Workplan

Workplans can be found in Annex M and P. ICGs can be found in Annex W.

9. STOCKS THAT ARE OR HAVE BEEN SUGGESTED TO BE THE SUBJECT OF CONSERVATION MANAGEMENT PLANS

9.1 Stocks with existing CMPs: New information and progress with previous recommendations

The Committee notes the value of IWC Conservation Management Plans (CMPs) as a framework for generating and maintaining range state support for at-risk cetacean populations globally. Five existing CMPs that continue to progress include: Western North Pacific gray whale (established in 2010), Eastern South Pacific southern right whale (2012), Western South Atlantic southern right whale (2012), Franciscana dolphin (2016) and South American river dolphins (2021). Some CMPs have been proposed or are under development in conjunction with other intergovernmental organisations (e.g., the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) and the Convention on the Conservation of Migratory Species (CMS)). Four 'priority populations' have been identified by the SC for CMP development: Arabian Sea humpback whale, Central American humpback whale, Mediterranean sperm whale and Mediterranean fin whale. Following a recommendation from SC69A (IWC, 2023b, Annex F) to liaise with other intergovernmental bodies, the Concerted Action for the franciscana dolphin and for Arabian Sea humpback whales were adopted at the CMS Conference of Parties in February 2024.

During SC69B, four new CMP proposals were received and adopted, including one provisional adoption: Central America humpback whales, Guiana dolphins, Lahille's bottlenose dolphins and riverine populations of Irrawaddy dolphins.

The Committee also reviewed developments of a CMP Handbook presented by the Standing Working Group (SWG-CMP) for CMP that will serve as the primary source of the CMP programme information and provide guidance for IWC members and stakeholders.

Considering the transition to biennial Committee meetings and the growing number of CMPs, the CMP Standing Working Group **requested** advice from the Committee on:

(1) The CMP review process including timeline and prioritisation of populations;
(2) Development of regional CMPs (for example a Regional CMP for several species in the Mediterranean Sea; Annex F, item 3.3); and
(3) Activities that should be included in the draft CMP Workplan 2025-28 (SC69B/CMP/06; Annex 2).

Attention: SC, CC
*The Committee **reiterates** its support for the establishment of CMPs for all priority populations and **endorses** the CMP Handbook (SC/69B/CMP/06).*

9.1.1 Southeastern Pacific southern right whales

The Committee received a progress update on the CMP for southeastern (SE) Pacific southern right whales (SC/69B/CMP/02). Considerable progress has been made since SC69A on topics related to passive acoustics, sightings, strandings and documentation of human interactions (see Annex F, item 2.1). A statement of justification for collection of biopsy samples, including from female calf pairs, was prepared to support the permitting approval process (see Annex F, item 2.1, appendix 2).

A CMP coordination meeting will take place in Chile, 30-31 May 2024, and a disentanglement training workshop is planned for Peru during 2024.

The potential of increased anthropogenic mortality was noted considering the two stranded southern right whale calves found with evidence of entanglement from fishing gear in 2023. The Committee **reiterates** the need to reduce anthropogenic mortality.

Attention: SC, CC, R, CG-Chile, Peru
*The Committee **expresses great concern** at the potential for increased anthropogenic related mortality and urges the adoption of prevention and mitigations measures, such as vessel speed limits and time-area fishing closures.*

The Committee also:

(1) ***Commends** the scientific work and international cooperation being undertaken for the PAM (passive acoustic monitoring) project, and congratulates the researchers for the obtained results, which will assist in designing future sighting surveys and providing baseline information on the potential location of breeding and feeding grounds. It encourages further monitoring off Peru (including PAM) and the continuation of data analyses and recommends the related proposal for funding;*
(2) ***Agrees** that the statement of rationale for the collection of biopsy samples of southern right whales, including calves, can be used as guidance for other range states and researchers;*
(3) ***Advises** range states to facilitate the process for the issuance of research permits to collect biopsy samples for southern right whales, including cow-calf pairs;*
(4) ***Encourages** comparison of photo-ID data and genetic markers across Indo-Pacific and southwest Atlantic southern right whales to better understand population connectivity between the two regions; and*
(5) ***Encourages** range states to facilitate the process for the issuance of research permits for deployment of satellite transmitters following best practice guidelines to better assess eastern South Pacific southern right whale movements, habitat use and exposure to threats.*

9.1.2 SW Atlantic southern right whales

The Committee **welcomes** the results from a multi-state analysis to assess dispersion rates of SRWs between the Argentinian and Brazilian calving grounds (SC/69B/SH/09Rev1). The analysis combined photo-ID data with consolidated catalogues from between 1997-2017 to estimate survival, site-specific recapture and movement rates, whilst also testing biological hypotheses on movement probabilities. Preliminary results indicated that the higher rate of population increase observed in Brazil is driven by a gradual dispersal of whales from Argentina and that dispersion rates are influenced by breeding success. Future analyses will consider taking reproductive cycles into account to produce more robust estimates of population parameters and a proposal to continue this work as presented to the Committee (Annex P, item 4.2.3).

The Committee **commends** this highly collaborative work and notes its importance for understanding population trends and estimating the abundance of SRWs in the Southwest Atlantic. This work will contribution to efforts to conduct multi-population level assessments for global assessments, particularly considering the wide-ranging movement of SRWs along the coastline between different calving grounds.

Attention: SC, CC, CG, R
*The Committee **recognises** that research to understand the effects of reproductive failure on whale dispersal between Argentina and Brazil is needed to progress with the assessment of southern right whales. It therefore **recommends** funding the proposal received to conduct this work. The Committee **welcomes** updates at SC70.*

The Committee received an update on the CMP for southwest Atlantic southern right whales. A Workshop to review new information and to update CMP actions (Annex F, item 2.2) was hosted in Santos, Brazil, in March 2024. Considerable progress has been made on topics related to estimation of movement between the Argentinian and Brazilian calving grounds, habitat-use, migration and population trends, as well as abundance of SW Atlantic southern right whales.

Attention: SC, CC, CG, R
*The Committee **welcomes** the report of the Workshop on the CMP for the Southern Right Whale Southwest Atlantic Population (SC/69B/REP/03) and **endorses** its recommendations.*

The first documented movement of a southern right whale from the western South Atlantic population into the range of the endangered Chile-Peru southern right whale population in the eastern South Pacific was recorded suggesting potential connectivity between these two populations. The stock identity of southern right whales along the eastern and western coasts of South America needs to be further investigated.

The Committee encourages comparison of photo-ID catalogues, genetics and satellite tracking to assess inter-ocean exchange between the southeast Pacific and southwest Atlantic. Such exchange information is needed to better inform the assessment of southern right whales. Further details can be found in Annex F, item 2.2.

Multi-population level assessments are needed to investigate the rate of dispersion and broader movement patterns of the Brazilian population which will progress CMP and SH agenda items. CMP considered a funding proposal to advance these objectives (Annex P, item 4.2.3).

A multi-state capture-recapture analysis produced estimates of dispersal rates and demographic parameters. Preliminary results indicated that the higher rate of population increase observed in Brazil is driven by a gradual dispersal of whales from Argentina and that dispersion rates are influenced by breeding success (Annex P, item 4.2.3).

9.1.3 North Pacific gray whales

A considerable body of new scientific information on gray whales was provided by Japan, Mexico, the Russian Federation and USA (see Annex F, item 2.3). This new information included updated assessments of abundance, calf production, body condition and strandings. The Committee **welcomes** the news that the gray whale unusual mortality event that started in 2019 in the eastern North Pacific ended in 2023. However, it expresses **great concern** about the very low numbers of gray whales observed in the western North Pacific off Sakhalin. The stakeholder workshops needed to update the CMP have been delayed indefinitely because of limited range state engagement due, in part, to the Russian invasion of Ukraine. Therefore, until it is possible to convene a meeting of the necessary range states, the Committee **reiterates** the following **recommendations** to ensure that the data needed to update the CMP in the future continue to be collected.

Attention: CG-R, SC, G, I, CC

*The Committee **reiterates** the importance of long-term monitoring of gray whales and strongly **recommends** that range states support this work and **welcomes** the new information provided by Mexico, USA, Russian Federation and Japan. Considering the inability to update the CMP as a result of limited range state engagement due, in part, to the Russian invasion of Ukraine, the Committee **reiterates** the following recommendations made at SC69A until it is possible to convene a meeting of the necessary range states:*

(1) ***Recommends** that every effort be undertaken to enable continuation of the Russian Gray Whale Project in order to maintain the decades-long time-series upon which assessment of the population relies, and to monitor the concerning decline in whale numbers at the nearshore feeding area off Sakhalin;*
(2) ***Recommends** that NOAA/SWFSC continue their surveys of ENP gray whale abundance and calf production on a regular basis, recognising the associated data are critical to the ASW and ASI Subcommittees; and*
(3) ***Recommends** that other research programmes focused on WNP gray whales (e.g., the industry funded programme initiated in 2002 off Sakhalin) follow the example set by the Russia Gray Whale Project and make their photo-ID catalogues and related data available via the IWC.*

The Subcommittee welcomes an update at SC70.

9.1.4 Franciscana

A Concerted Action for the franciscana was adopted at the 14th CMS meeting in February 2024 in Uzbekistan, allowing CMS and the IWC to coordinate to further protect this species. Progress on the activities of the CMP for the franciscana included new information on abundance and mortality estimates of franciscana in Franciscana Management Areas (FMAs) Babitonga, southern Brazil, and on bycatch estimates of franciscana for each of the 11 recognised FMAs (Annex F, item 2.4; Annex J, item 12.8.3).

Attention: SC, CC, R, CG-Argentina, Brazil and Uruguay

*The Committee **recommends** the following:*

(1) *Continue to evaluate bycatch estimates, especially because of the continued and likely unsustainable incidental take of franciscana in most FMAs;*
(2) *Develop new surveys to estimate abundance of franciscana in FMA IV; and*
(3) *Review estimates of bycatch for franciscana to work towards a Comprehensive Assessment of the franciscana.*

The Government of Brazil is currently considering the establishment of the Albardão National Marine Park, an important area (approximately 16,000 sq. km) for biodiversity, including franciscana and Lahille's bottlenose dolphin. The creation of this Marine Protected Area was identified as one of the priority actions under the CMP (IWC/66/CC11; 2016).

Attention: SC, CC, CG-Brazil

*The Committee **recommends** that the Government of Brazil continues the formal process of creating the Albardão National Marine Park as a relevant measure to protect the franciscana, while also serving as a key refuge to enhance the survival of Lahille's dolphin.*

9.1.5 South American river dolphins

The South American river dolphins CMP was recognised as a transboundary cooperation tool by the Presidents of countries in the Amazon region during the Belem Summit in 2023. As an example of international coordination, a Global Declaration of the conservation of river dolphins and their habitats was signed by nine countries from Asia and South America (Bangladesh, Bolivia, Brazil, Cambodia, Colombia, Ecuador, India, Nepal and Venezuela).

The Governments of Brazil, Colombia, Ecuador and Peru presented a progress update on the South American River dolphin CMP which included prioritised and coordinated action among governments, civil society and the South American River Dolphin Initiative on 30 of the 32 CMP actions (see details in Annex F, item 2.5).

The Ministries of 'Fisheries and Aquaculture' and 'Environment and Climate Change' of Brazil enacted the Inter-ministerial ordinance (MPA/MMA N. 4; June 2023) to create a permanent ban on the fishing, landing, transport and commercialisation of the piracatinga fish; a fishery that has been promoting the intentional killing of *Inia* for use as bait. Abundance estimates showed apparent declines of up to 52% for *Inia geoffrensis* in the upper Amazon River between 1993 and 2022.

During September and October 2023, the Amazon experienced one of the most extreme droughts in the last 100 years. The death of more than 300 dolphins in Lake Tefé and Coari (Brazil) represented an unprecedented mortality event in the region highlighting the need for an early warning system and for protocols to deal with mortality events related to such climate crises.

Attention: SC, CC, CG-Brazil, CG-Colombia, CG-Ecuador, CG-Peru

*The Committee **expresses concern** about the apparent decline of river dolphins (Inia geoffrensis and Sotalia fluviatilis) in the Amazon and **encourages** further research into population and stock structure for more accurate assessment.*

*Considering the serious climate situation in the central Amazon in 2023 and the possibility that it will continue to occur, the Committee **recommends** a new line of work be included in the CMP focused on climate impacts on river dolphins, including the generation of an early warning system, management protocols, and the training of fishers, veterinarians and biologists.*

The Committee reiterates the following, including:

(1) ***Recommends** coordinated monitoring of compliance with the piracatinga moratorium in border areas between Venezuela and Colombia;*
(2) ***Recommends** developing awareness and environmental education workshops to discourage the hunting and use of dolphins; and*
(3) ***Recommends** taxonomic revision to interpret the impact of the population decline across the extent of the distributions.*

*The Committee **welcomes** an update at SC70.*

9.2 Progress with identified priorities

9.2.1 Humpback whales in the northern Indian Ocean, including the Arabian Sea

Significant and commendable progress has been made on the development of a CMP for Arabian Sea humpback whales. The work of the Arabian Sea Whale Network has proven to be highly successful in serving as a key framework to foster international collaboration range wide and facilitate the creation a CMP.

The Committee **expresses concern** about: (1) the small population size; (2) the decline in Arabian Sea humpback whale song detection during the breeding season coupled with only sporadic sightings in the area formerly considered core habitat; and (3) the regional increase in the volume of vessel traffic increasing the risk of ship strikes.

The Committee **reiterates** its support of the work towards a joint CMS-IWC CMP for Arabian Sea humpback whales and welcomes the extension of the CMS Concerted Action. It **commends** the ongoing work of the Arabian Sea Whale Network at regional and national levels and particularly the work of the new communications focal point (Annex F, item 3.1).

Additionally, the Committee **commends** the passive acoustic monitoring work conducted in India, and particularly welcomes the Indian government agencies investments into this work, which is complemented by funding provided by the Committee (Annex F, item 3.1).

Attention: SC, CG, G, I, R, S

*The Committee **commends** efforts fostered by authorities to study the Arabian Sea humpback whale population and **expresses deep concern** for the population based on its current status and the degrading condition of its habitat. It strongly reiterates that Arabian Sea humpback whales are priority candidates for a CMP. It also welcomes the efforts to encourage range states to develop a joint CMS-IWC CMP. The Committee **recommends** the following actions:*

(1) *Continued involvement of at least one range-country scientist in regional communications and coordination noting the need for a full-time CMP coordination role;*

(2) *Continuation of fisheries and ship strike risk assessments and work with stakeholders to develop mitigation measures to the threats within the most important known habitat for Arabian Sea humpback whales, the Gulf of Masirah and Offshore waters IMMA;*
(3) *Continuation of collection of photo-ID and genetic data from Arabian Sea humpback whales. If possible, the sampling should be expanded to encompass wider temporal (and possibly spatial) coverage to increase sample sizes for updated abundance and trend modelling;*
(4) *Data collected from 2019 onwards should be used to update models of abundance and trends, and to update the visual health assessment conducted by Minton et al. (2022);*
(5) *The abundance estimates presented in SC/69B/CMP/12 (or an update thereof) be formally reviewed by ASI/ASG and the authors publish these in a peer-reviewed journal; and*
(6) *Passive acoustic monitoring off the coasts of India and Oman be continued and be implemented in other areas of historical or potential Arabian Sea humpback whale distribution.*

9.2.2 Central American humpback whales

The Commissioner for Panama presented the CMP for Central American humpback whales (Annex F, item 3.2), which was developed by Costa Rica, Guatemala, El Salvador, Mexico, Panama, and the USA. The main objective of this CMP is to conserve the Central American humpback whale population and its habitat through collaborative regional actions to reduce anthropogenic threats. Additionally, it aims to provide the range states with scientific evidence and management tools to implement actions to conserve this population.

The next step for this CMP will be to conduct a 4th workshop focusing on threats and mitigation measures for this population, which the Committee **agrees** would benefit progress of the CMP.

Attention: SC, CC, CG, G
*The Central American humpback whale population was identified by the Commission as a priority for a CMP. The Committee **endorses** the scientific and technical aspects of the CMP proposal.*

9.2.3 Mediterranean species/populations

ACCOBAMS Resolution 8.14 provides that other species within the ACCOBAMS region should be considered for CMPs in the future. Target species include sperm whales and Cuvier's beaked whales within the Mediterranean Sea, three Black Sea cetacean species and Iberian killer whales (discussed under item 3.1, Annex Q). See Annex F, item 3.3 for more details.

9.2.3.1 Mediterranean Fin Whales

The Committee previously recommended Mediterranean fin whales as a 'priority population' for the CMP development process (SC2151).

Attention: SC, R
*The Committee **recommends** the genetic laboratory and analytical work to clarify the relationship between fin whales in the Mediterranean and adjacent North Atlantic waters be completed by the end of 2025. This will facilitate work to finalise the joint ACCOBAMS/IWC CMP at the forthcoming stakeholder workshop.*

9.2.3.2 Mediterranean Sperm Whales

Mediterranean sperm whales are listed as 'Endangered' in the IUCN Red List. The Committee and ACCOBAMS consider these whales a 'priority population' for a CMP because they are vulnerable to ship strikes, anthropogenic noise and bycatch, in addition to marine litter (see Annex F, item 3.3.3 for more information).

Attention: CG, CC, IGO
*The Committee **welcomes** the news that ACCOBAMS is giving priority to the development of a CMP for Mediterranean sperm whales and **agrees** that this could be a joint ACCOBAMS/IWC CMP with ACCOBAMS taking the development lead.*

9.2.3.3 Other Species for which CMP Proposals are in Development

CMP proposals for three species (bottlenose, common and Risso's dolphins) are under development by ACCOBAMS. The possibility of combining these species under a single CMP is under consideration given some commonalities across them (e.g., background information, threats, range states and in some cases stakeholders). Proposal drafting groups agreed to use consistent wording and cross-referencing in developing species-specific plans until a decision on multi-species plans is made. A single stakeholder workshop is being considered for the development of these plans.

The Committee notes that the general guidance for CMP development allows for multi-species/population or threat-based regional CMPs. The advantages/disadvantages of such CMPs need to be considered on a case-by-case basis. This will be raised within the CC SWG-CMP and discussed at SC70.

Attention: SC, R, CG, CC, ACCOBAMS
CMPs form a valuable component of the conservation work of both the IWC and ACCOBAMSWork in the Mediterranean Sea and elsewhere has shown that the science underlying conservation efforts is immeasurably enhanced by collaboration (both with data and analyses) of all research groups operating within the region.

*The Committee **recommends** the ACCOBAMS Scientific Committee CMP coordinators use the framework of threat-based or regional-based CMPs to facilitate collaboration amongst range states, including developing data sharing agreements that build trust and improved cooperation.*

9.2.4 Guiana dolphins

At SC69A, the Guiana dolphin was identified as a 'priority population' for a CMP. Supported by the governments of Brazil, Costa Rica, France and Panama, a Guiana dolphin CMP proposal was presented to the Committee this year. This proposal aligns with global initiatives like the Ocean Decade and Sustainable Development Goal 14 (IOC, 2018), emphasising the species' importance as an indicator of ocean health. The Guiana dolphin CMP, which involves international cooperation and strategic scientific actions, aims to mitigate threats, enhance monitoring, raise public awareness and align international initiatives with national action plans (Annex F, item 3.4).

Attention: SC, CC, C, CG, G, R, IGO
*The Committee **commends** the range states of Brazil, Costa Rica, France and Panama for drafting the Guiana dolphin CMP proposal (SC/69B/CMP/18). It **endorses** the scientific and technical aspects of the CMP.*

9.2.5 Lahille's bottlenose dolphins

The Lahille's bottlenose dolphin was identified as a 'priority population' for a CMP at SC69A (IWC, 2023b, annex Q). This coastal subspecies has a population size of approximately 500 individuals and is declining in at least some parts of its range. The range states Argentina, Brazil and Uruguay presented a CMP proposal for the Lahille's bottlenose dolphin during SC69B.

Attention: SC, CC, C, CG, G, R, IGO
*The Committee **commends** the proponent range states of Argentina, Brazil and Uruguay for drafting the Lahille's bottlenose dolphin CMP proposal (SC/69B/CMP/19). It **endorses** the scientific and technical aspects of the CMP proposal.*

9.2.6 Riverine populations of Irrawaddy dolphins

A CMP proposal, developed by the Fisheries Administration Department of the Government of Cambodia, WWF International and Yayasan Konservasi RASI of Indonesia, includes three 'Critically Endangered' (IUCN Red List) riverine subpopulations of the Irrawaddy dolphin (*Orcaella brevirostris*): (1) Ayeyarwaddy River (Smith, 2004); (2) Mekong River (Smith *et al*., 2023); and (3) Mahakam River (Jefferson *et al*., 2008). All populations number less than 100 individuals and are declining primarily because of fishery bycatch.

The proposed CMP aims to build collaboration between the three range countries, Cambodia, Myanmar and Indonesia. Each are supportive of a collaborative effort to better understand the status of Irrawaddy dolphins in their waters.

The Committee **welcomes** the presentation and **commends** the proponents for the extensive work conducted. Concerns were raised on the commitment of at least two governments. An intersessional correspondence group was established to track progress on acquiring the necessary documentation representing formal agreement by the range states to support the CMP before it is considered at IWC69.

Attention: SC, CC, CG, G, ICG
*The Committee **commends** Cambodia, Myanmar and Indonesia for their efforts to develop a CMP for three riverine populations of Irrawaddy dolphins and **endorses** the scientific and technical aspects of this proposal. This endorsement is provisional with the understanding that the government of Cambodia and at least one other range state demonstrate a formal commitment to this CMP before IWC69.*

9.3 Progress on previous recommendations

The international and collaborative nature of CMPs requires significant input before progress on previous recommendations can be adequately measured. Despite this, the Committee has seen very encouraging progress on the existing CMPs for SE Pacific southern right whales, SW Atlantic southern right whales, franciscana and South American river dolphins, including the implementation of research, monitoring and conservation actions, outreach, coordination and fundraising. These CMPs represent dedication, determination and goodwill. The individuals, communities, stakeholders and governments involved deserve praise for their efforts.

The Committee looks forward to the completion of CMP proposals for priority populations in the near term, including Mediterranean fin whales. Future CMPs will focus on Arabian Sea humpback whales, other Mediterranean species/

populations including sperm whales, Cuvier's beaked whales and delphinids, such as Risso's, common and bottlenose dolphins. Further, the Black Sea Commission (Sub-Regional Coordination Unit) has suggested harbour porpoise, bottlenose and common dolphins as candidate species for CMPs. Finally, the Committee notes that the Iberian killer whale population has also been recommended as a priority species for a CMP (see Item 16.2.1 below and Annex Q, item 3). The Committee looks forward to progress on a provisionally endorsed CMP for riverine populations of Irrawaddy dolphins (see Annex F, item 4).

9.4 Workplan

The workplan can be found in Annex F. ICGs can be found in Annex W.

In discussion of the workplan, the Committee noted the increase in the number of CMPs proposed within South America and considered the need for regional intersessional meetings to advance the Committee's agenda, especially now that the Committee is transitioning into a biennial schedule.

A regional intersessional meeting could be cost-effective given the synergies across many South American CMPs. It would reduce travel distance and time, increase participation of CMP stakeholders, including greater engagement of local governments. It would also reduce the workload at the biennial Committee meeting that could then focus on non-South American CMPs. However, the regional meetings may result in less Latin American representation at Committee meeting, which could impact expertise available for discussions of other agenda items (e.g., small cetaceans and Southern Hemisphere whales).

Attention: SC, CC, CG, ICG, R
*The Committee **agrees** that a regional intersessional meeting would significantly advance the CMP agenda and would contribute to other subcommittees, including HIM, SM and SH. The Committee **recommends** funding this workshop as well as the establishment of an ICG under Barros/Luna (Brazilian Government) to organise it.*

Further discussion highlighted the need to host a second in-person workshop in Oman to progress CMP development for the Arabian Sea humpback whale to support the development of a national conservation framework and to hold multilateral exchanges to initiate the formal CMP proposal process.

Attention: SC, CC, CG, ICG, R
*The Committee **agrees** that an in-person workshop in Oman would significantly advance the development of a CMP for Arabian Sea humpback whales and **recommends** funding this workshop.*

The Committee considered that the 4th workshop on threats and mitigation actions for Central American humpback whale to advance the development of the proposed CMP could be held in California, USA, rather than Central America and could be hybrid. This would reduce costs and travel visas because many researchers are based in the USA and others could join virtually.

Attention: SC, CC, CG, ICG, R
*The Committee **recommends** an intersessional workshop on the threats and mitigation measures of Central American humpback whales to advance the goals of the CMP.*

It was noted that overall, the Committee regarded workshop proposals as higher priority to advance their agenda items compared to the research proposals received.

10. STOCK DEFINITION AND DNA TESTING

During the present meeting, the SD-DNA Subcommittee provided advice on stock structure to other subcommittees (Item 10.1), received voluntarily submitted information on the DNA registers maintained by Japan, Iceland and Norway (Item 10.2), and made progress on updating the genetic data quality guidelines (Item 10.3).

10.1 Provide advice to other subgroups on population structure for requested stocks

The SD-DNA Subcommittee has been tasked with reviewing high-priority stock-related papers from other subcommittees and working groups and providing them with stock structure-related feedback and recommendations. These discussions often refer to the genetic data quality and genetic analysis guidelines (see Items 10.3 and 10.4).

10.1.1 North Pacific gray whales

As part of the Range-wide Workshops on the Populations Structure and Status of Gray Whales in the North Pacific that were held 2014-18 (IWC, 2015; 2016; 2017b; 2018c; 2019b), as well as subsequent discussion by the Committee (IWC, 2021, Annex F), two stock structure hypotheses (4a and 7a, see IWC, 2021, Annex F) are currently considered high priority

for inclusion in the modelling framework used to evaluate the status of the North Pacific gray whale. In Hypothesis 4a, two breeding stocks of gray whales exist: an eastern breeding stock (EBS) that consists of the northern feeding group (NFG) and Pacific Coast feeding group (PCFG), both of which overwinter in the lagoons and coastal waters of Mexico; and a second breeding stock that consists of the western feeding group (WFG) of whales, which also overwinter off Mexico. Under this hypothesis, the southern Kamchatka and northern Kuril Islands feeding area (SKNK) is used by both WFG and NFG whales. In Hypothesis 7a, a third breeding stock (the Western Breeding Stock, WBS) exists that includes whales feeding on the western North Pacific feeding areas (including SKNK, which is also used by the WFG and NFG whales) and migrates to the waters off Vietnam and the South China Sea (VSC). Additional hypotheses (detailed in IWC, 2021) were included as medium priority hypotheses and are evaluated as sensitivity tests. An ICG was formed and tasked with re-evaluating the plausibility of all hypotheses under consideration and to examine issues relating to terminological distinctions being used in discussions of gray whale stock structure (IWC, 2022a).

The next IR for gray whales started at SC69B (2024). Although no new information on the stock structure of gray whales was received this year, the Committee agrees to continue the work of the ICG in order to provide advice during the IR.

10.1.2 Blue whales

The current understanding of stock structure in blue whales is based largely on song types (reviewed in Širović and Oleson, 2022). Recognised populations include the Antarctic, the south-east Pacific Ocean (SEPO); north-west Indian Ocean (NWIO); central Indian Ocean (CIO); south-west Indian Ocean (SWIO); south-east Indian Ocean (SEIO); south-west Pacific Ocean (SWPO); North Atlantic (NAO), central and western North Pacific (CWNPO); and the north-east Pacific (NEPO).

The Committee reviewed new information on the population structure and subspecies taxonomy of the blue whale (Attard *et al*., 2024). Using a comprehensive genetic dataset (~16,700 Single Nucleotide Polymorphisms loci and mtDNA control region sequences), three high-level groups were identified by region, including the Antarctic, the Indo-western Pacific, and the eastern Pacific. Additional fine-scale structure was also identified, with significant differentiation found between blue whales in the NEPO, SEPO, SEIO, SWIO and SWPO.

The Committee **welcomes** the opportunity to review this new information, which is valuable in informing the ongoing IA of Antarctic blue whales (see Annex K). After reviewing the findings, the Committee **agrees** that the currently available genetic data suggests a single panmictic population in the Antarctic, which supports considering the Antarctic blue whale as a single stock in the assessment. It was noted, however, that the analyses did not include any genetic data from the lower latitudes of the South Atlantic and thus this area could not be evaluated.

The findings are also of importance to the pre-assessments that are currently underway for Southern Hemisphere non-Antarctic blue whales (see Annex P) and North Pacific blue whales (see Annex M). Within the Southern Hemisphere, the results supported recognition of the SEPO, SWPO, SWIO, and SEIO as separate units, but sample sizes in the NWIO and CIO were too small for robust comparisons. While the findings also supported recognition of the SEPO as distinct from the NEPO, there was evidence that some gene flow across the equator occurs in the eastern Pacific, suggesting that whales from these two populations may overlap during the beginning and end of their respective breeding seasons or that some animals from one or both populations may remain in the eastern Tropical Pacific waters year-round. The analyses did not include any samples from the CWNP and only two samples from the NAO, and thus it was not possible to make inferences about those groups. It was noted, however, that data on North Atlantic blue whales recently became available (Jossey *et al*., 2024), and that samples from the CWNP have been collected as part of the IWC-POWER surveys and are being incorporated into ongoing analyses of population structure in the North Pacific.

Information regarding contemporary use of the South Atlantic by blue whales is limited. Although sightings in this region are rare, it was reported that in the past several years blue whales have been sighted off Brazil and some biopsies have been collected that may inform future studies.

Two aspects of the new information reviewed by the Committee have implications for blue whale subspecies taxonomy. First, while additional sampling, data, and analyses are needed before drawing any conclusions, the results presented in Attard *et al*. (2024) indicate that whales sampled in the northern Indian Ocean, which are currently considered to represent *B. m. indica*[3], are genetically more similar to whales in other regions of the Indo-western Pacific (recognised as *B. m. brevicauda*) than would be expected for a separate subspecies. Secondly, while two of the three high-level groups identified are generally consistent with subspecies, the third group contains blue whales from both the NEPO and the SEPO, which are currently considered different subspecies, with NEPO whales being part of the Northern Hemisphere subspecies (*B. m. musculus*) and SEPO whales being proposed as a separate unnamed subspecies (Branch *et al*., 2007). While additional analyses that include a sufficient number of samples from the North Atlantic are needed to resolve the relationship between NEPO and NAO whales, this latter finding suggests that subspecies taxonomy in blue whales should be re-examined.

[3]Committee on Taxonomy (2023). List of marine mammal species and subspecies. Society for Marine Mammalogy.

Attention: SC
*After reviewing the results of new analyses of genetic structure of blue whales, the Committee **agrees** that the findings are generally consistent with the stock structure being considered for assessments, in that the results support recognition of the south-west Pacific, south-west Indian, south-east Indian, south-east Pacific, north-east Pacific and Antarctic as separate units.*

*However, few or no data were analysed from some areas known to be used by blue whales. Including data from these areas in future analyses would increase understanding of genetic structure and subspecies taxonomy. Thus, the Committee **recommends**:*

(1) *Collaborative sharing of available tissue samples and genetic data from across the global range of blue whales, in particular from areas underrepresented in current studies (Atlantic Ocean, northern part of Indian Ocean); and*
(2) *Further tissue sampling for population genetic analyses from areas underrepresented in current studies (along the South American east (Brazil) and African west coast, northern and southwestern part of Indian Ocean).*

*Furthermore, the Committee **agrees** that including recently published data from the North Atlantic, where the nominate subspecies was described, into future analyses of subspecies taxonomy would be informative.*

10.1.3 North Atlantic fin whales

The last IR for the North Atlantic fin whale was completed in 2023 (IWC, 2023b), during which the Committee reviewed the previously agreed upon stock structure hypotheses. While previous genetic analyses have not detected genetic structure within the North Atlantic (Pampoulie *et al*., 2008), most of the samples are from Iceland and gaps in sample coverage in other areas limit the ability to conduct most of the analyses (e.g., evaluating mixing; relatedness analysis and even conventional analyses of population structure).

Attention: SC
*In preparation for the next IR of the North Atlantic fin whale in 2029, the Committee **reiterates** its recommendation (SC2372) that collaborative sharing of available tissue samples and genetic data from across the range of the fin whale in the North Atlantic to facilitate analyses of genetic structure and mixing should continue.*

10.1.4 Bering-Chukchi-Beaufort Seas bowhead whales

An IR for BCB bowhead whales is scheduled for 2027. Following review of available data during the previous IR in 2018, it was agreed that the results of genetic analyses were consistent with a lack of substructure within the BCB stock but that some level of historic or contemporary gene flow could occur between the BCB and the eastern Canadian stocks (IWC, 2018a).

Attention: SC
*In order to provide the information for the 2027 IR of the BCB bowhead whale, the Committee **recommends** that additional genetic analyses be conducted to explore potential differentiation within and connectivity between the BCB and the Eastern Canadian stocks. These analyses could include SNPs, mtDNA and whole genome resequencing to make them comparable with recent studies of other bowhead whale stocks.*

10.1.5 Guiana dolphin

The Guiana dolphin is a small coastal delphinid that ranges from Nicaragua to southern Brazil (Flores and Da Silva, 2009). This species is listed as 'Near Threatened' by the IUCN (Secchi *et al*., 2018) and faces various anthropogenic threats throughout most of its distribution. Based largely on genetic data, twelve management units have been proposed throughout the Guiana dolphin's range (Cunha *et al*., 2020) and an ICG was formed in 2020 to review the support for recognising these units (IWC, 2021c).

In 2023, the Committee endorsed the nomination by Brazil, France and Panama to establish a CMP for the Guiana dolphin, and the scientific components of the CMP proposal were approved at this meeting. Better understanding of the population structure and boundaries of the Guiana dolphin throughout its range would facilitate conservation management planning, and thus the Committee **agrees** to continue its evaluation of available genetic and other (e.g., stable isotopes, contaminants) lines of evidence pertaining to population structure in order to provide advice on proposed management unit delineations.

10.2 DNA registers

The Committee received voluntary updates of the DNA registers from Iceland, Japan and Norway through 2023. Details are given in Annex O. Almost all samples in the Japanese and Icelandic registers have been analysed for mitochondrial DNA (mtDNA) and a standard set of microsatellites, while almost all Norwegian samples have been genotyped for a standard set of microsatellites and, for those collected in 2016 or later, SNPs.

Representatives of Iceland and Norway submitted a statement reasserting the position of the Governments of Iceland, Norway and Japan on DNA registers (see DNA registers in Annex O). The Committee thanks Iceland, Japan and Norway for providing voluntary and detailed updates to their DNA registers using the standard format agreed in 2011.

10.3 DNA data quality

The DNA data quality guidelines address DNA validation and systematic quality control in genetic studies and are currently available on the IWC website[4]. As the use of high throughput sequencing approaches to produce genetic data has become increasingly common, the need to update these guidelines to address data quality issues associated with these newer approaches has been highlighted. This year the Committee made substantial progress in identifying specific aspects of the guidelines that need to be updated or otherwise addressed (as detailed in Annex O). The Committee agrees that once these changes are made and reviewed, the document will be suitable to submit for publication. Given that continuous updates will remain necessary to reflect methodological advancements, the Committee **agrees** that the ICG for DNA quality should continue its work and report on its progress at SC70.

10.4 DNA guidelines checklist

In addition to the guidelines for data quality, guidelines for genetic data analysis have also been compiled and published (Waples *et al*., 2018). Given that both guidelines contain extensive information, a concise 'bridge' document is needed to: (1) provide a checklist of key aspects of data quality and analysis that could aid interpretation of documents reviewed by the Committee; and (2) update aspects of the guidelines, particularly with respect to genomic methodologies and analysis. This year, the checklist and updates for the data analysis guidelines were compiled and are included as an appendix in Annex O. Given that the guidelines need continuous updates to reflect methodological advancements, the Committee **agrees** that the ICG for genetic data analysis should continue its work and report on its progress at SC70.

10.5 Recommendations on the avoidance of sample depletion

This Agenda Item was established based on concerns about the depletion of tissue samples collected as part of the IWC's SOWER and POWER surveys (IWC, 2018a, Annex I). The Committee reviewed past progress of this Item and noted that discussion has primarily focused on providing advice on genomic approaches, such as Whole Genome Sequencing (WGS), that would maximise the value of the tissue used. It was noted that different WGS approaches are available, and the amount of tissue used, and the amount and quality of data received varies between them. For highly depleted samples, preference might be given to high quality WGS requests. The Committee **agrees** to continue its work on this topic intersessionally and report on its progress at SC70.

10.6 Review terminology used for stock structure-related terms used within the IWC

Following a recommendation arising in 2011 (IWC, 2012), a 'go-to' glossary of stock related terms was compiled, with the aim of encouraging consistent use of stock related terms within reports from and in papers submitted to the Committee. Initial work on this glossary focused on defining terms most commonly used in assessments of baleen whales (IWC, 2013a). While the Committee has made some progress in standardising the use of terminology within the subcommittees focusing on large whale assessments, aligning this terminology with that used by the SM Subcommittee has been more challenging (see IWC, 2014, appendix 5). No progress was made on this Item this year. However, to continuously follow scientific advancements as well as to provide a forum for *ad hoc* intersessional advice on terminology, the Committee **agrees** that the ICG on terminology should continue its work and report on its progress at SC70.

10.7 New genetic approached for use by the Scientific Committee in addition to stock structure issues

No papers detailing new genetic approaches were received. However, in discussion, it was noted that Whole Genome Sequencing (WGS) is increasingly applied in population genomic studies and in a conservation and management context (e.g., Celemín *et al*., 2023). The Committee **encourages** future contributions of papers using WGS to facilitate future discussion of the value of this approach to the Committee.

10.8 Progress on previous recommendations

Previous recommendations from 2023 were reviewed and updated.

10.9 Workplan

The workplan can be found in Annex O. The ICGs can be found in Annex W.

[4] https://iwc.int/scientific-research/scientific-committee-handbook

11. CETACEAN ABUNDANCE ESTIMATES AND STOCK STATUS

11.1 Review of abundance estimates

The Committee reviewed a wide variety of abundance estimates for cetaceans around the world. The reviews considered all aspects of the survey, the data, the statistical analysis, the conclusions, and other factors, with a focus on whether the estimate is useful to the Committee as a basis for conservation and management advice.

The classification system used by the Committee to categorise abundance estimates is given in Annex D, appendix 2. Two amendments to the categorisation system were adopted: revised wording for Category 4 and a new Undetermined category.

Attention: SC, SC-ASI

*The Committee **agrees** the following revision to the ASI Category 4 for categorisation and endorsement of abundance estimates:*

> ***Category 4:** Used when the Committee wishes to endorse small sample size datasets while not endorsing abundance estimates derived from those data. Application of many abundance estimation methods may be inadvisable when sample sizes are too small (e.g., too few sightings in a survey, or too few captures or recaptures in a photo-ID study). In such cases, endorsement of the data as Category 4 would be appropriate when the survey design and analysis were of sufficient quality to provide reliable general information about the low number of whales in the area. Then, these data could be used for fitting population models or In-depth Assessments despite not yielding (from themselves alone) a reliable abundance estimate. Because the RMP allows the use of abundance estimates with few or zero sightings, an abundance estimate derived from Category 4 data may be used with the RMP even though the estimate itself has not been endorsed for a higher category.*

Attention: SC, SC-ASI

*The Committee **agrees** to establish the following new ASI Category for categorisation and endorsement of abundance estimates:*

> ***Undetermined (U)**: This category covers estimates for which the Committee is unable to assign another category at this time, for example, estimates derived from novel approaches that the Committee considers insufficiently understood or tested. When used, this categorisation should be accompanied by an annotation to explain the reason. Estimates categorised as Undetermined should not be added to the IWC Table of Agreed Abundance Estimates and may be reconsidered as circumstances evolve.*

The Committee's review of abundance estimates is conducted by ASI (Annex D) but much of the effort is made during the pre-meeting report of the Abundance Steering Group (ASG) as detailed in SC/69B/REP/07, referred to hereafter as the ASG Report. A summary of the abundance estimates considered, their methods, reviewer and subcommittee discussion, and the categorisation rationales is given in Annex D, item 2.1.

In addition to categorising reviewed abundance estimates, the Committee is tasked with recommending whether each endorsed estimate should be published on the IWC website (iwc.int/about-whales/estimate). In 2023, the Committee agreed (IWC, 2023b, item 3.2.1) that 'abundance estimates that represent very large areas or nearly complete populations, and are believed to have no severe biases, should be published on the webpage. Smaller sub-units or subregions of particular interest to the Commission or the public may also be included'. In what follows, online publication is not supported unless explicitly recommended.

If, on occasions, there is more than one accepted abundance estimate available for the same time period (e.g., from different methods), the public website should present a single estimate (using the standard method outlined in the recommendation below). This decision does not commit individual subcommittees to use the same approach in their assessments.

Attention: S

*The Committee notes that the general public might be confused by multiple different abundance estimates presented in the same year on iwc.int/about-whales/estimate. The Committee **recommends** that the inverse variance weighted average should be presented on the website.*

Attention: SC, S, C

*The IWC Table of Accepted Abundance Estimates is an important tool for the work of the Committee and the Commission. The Committee **recommends** that the following estimates should be endorsed, incorporated into that table, uploaded to the IWC website when indicated and endorsed by the Commission:*

(1) *Eastern North Pacific gray whales: 14,530 (95% CI = 13,235-15,960) in 2023 and 19,260 (95% CI = 17,400-21,301) in 2024. Category 1A. The entire time series of abundance estimates from 1968 to 2024 should be added to the webpage, revising any previous estimate since 2007 that has changed as a result of this update (Annex D, table 1).*
(2) *Pacific Coast Feeding Group gray whales: 210 (CV 0.10) in 2021 and 202 (CV 0.09) in 2022. Category 1A. The time series from 1998 to 2022 should be added to the webpage, revising any previous estimate that has changed as a result of this update (Annex D, table 2).*
(3) *Southern hemisphere fin whales:*
   (a) *Scotia Sea: 3,180 (CV = 0.57) in 2000. Category 3.*
   (b) *Antarctic Peninsula: 1,492 (CV = 0.57) in 2000. Category 3.*
   (c) *Drake Passage: 4,898 whales (95% = CI 2,221-7,575) in 2013. Category 2[a].*
   (d) *Bransfield Strait: 94 whales (95% CI = 0-210) in 2013. Category 2[a].*
   (e) *Elephant Island: 528 whales (95% CI = 156-1,782) in 2016. Category 3[a,b].*
   (f) *South Orkney Islands: 796 whales (95% CI = 249-2,541) in 2016. Category 3[a,b].*
   (g) *Drake Passage-Antarctic Peninsula: 4,487 whales (95% CI = 1,326-15,179) in 2001-02. Category 3.*
(4) *Eastern Bering Sea beluga whales: 12,269 (CV = 0.12) in 2017. Category 1A[c].*

*The Committee **agrees** that all these abundance estimates meet the definition of an Evaluation Extent of 1 ('examined in detail by the Committee').*

[a]These estimates should be annotated in the IWC Table of Agreed Abundance Estimates to indicate that uncertainty about the detection function estimation is not reflected in the confidence intervals.
[b]Revised 95% confidence intervals were obtained using the approach from Buckland et al. (1993).
[c]This estimate should be annotated in the IWC Table of Agreed Abundance Estimates to indicate that uncertainty from the availability estimate was not propagated through to the final abundance estimates.

The Committee notes the importance of continued surveys of eastern North Pacific gray whales due to aboriginal subsistence whaling and the periodic occurrence of unusual mortality events (including one, 2019-23, recently declared closed by NOAA). Given the relevance of these studies, it is important to update certain components of the surveys and analysis.

Attention: CG-USA

*Regular abundance estimates of North Pacific gray whales are important for many aspects of the Committee's work (e.g., see Annexes E, F, G and L). The Committee **commends** the long-term work already undertaken and **strongly recommends** that continued frequent surveys of eastern North Pacific gray whales be funded, conducted and reported to the Committee. It **reiterates** the need for additional effort to be undertaken to update the estimates of detection probability, the proportion of night-time passage, and the availability bias correction factor for offshore whales and diving whales.*

Correction factors are an important component of abundance estimation. The Committee established an ICG (Annex D, item 8.5, table 4) to create a bibliography relating to correction factors and to consider the development of a corresponding IWC database in accordance with Committee guidelines (see Annex I).

While reviewing an abundance estimate for Southern Hemisphere right whales, the Committee noted that a simple *ad hoc* correction factor (3.94), developed in 2013 (IWC, 2013b), used to convert breeding female numbers to total population, had been subsequently employed out of context in several studies of southern right whales around the world. This factor does not include an uncertainty estimate and does not incorporate more recent data.

Attention: SC-SH

*The Committee **recommends** that new data on Southern Hemisphere right whales be used to estimate stock-specific correction factors and corresponding uncertainty estimates to convert breeding female numbers to total population, and that these factors should replace the previous ad hoc correction factor of 3.94 where possible in future analyses.*

The procedures for review of abundance estimates under ASI have evolved and improved over time (e.g., IWC, 2020, Annex P), often annually. These policies and amendments require consolidation and perhaps updating for clarity. The Committee has established an ICG (Annex D, item 8.5, table 4) to achieve this so that procedures can be reviewed and endorsed at a subsequent Committee meeting.

11.2 IWC Table of Agreed Abundance Estimates and the abundance page on the IWC website

The Secretariat's Lead for Statistics and Modelling provided a report on changes to the IWC Table of Agreed Abundance Estimates. All changes agreed in 2023 to the IWC Table have been completed (Annex D, item 3.1). The Committee also developed procedures to label abundance estimates in the IWC Table of Agreed Abundance Estimates that had been agreed by the Committee prior to the establishment of ASI. Otherwise, the status of such estimates with respect to use in IA, provision of management advice or other work may be unclear. These procedures were applied to relabel old estimates (see Annex D, item 3.1).

A previous description of a confidence interval on the IWC website was incorrect.

Attention: S

*The Committee **recommended** replacing the text on the IWC website page on whale abundance that describes how to interpret a confidence interval with the following:*

> *'The IWC presents a "best estimate" accompanied by a 95% "confidence interval," showing a range of plausible values for the population's actual abundance. As an example, the 1991/92-2003/04 abundance estimate for Antarctic blue whales is 2,300 with a 95% confidence interval of 1,150-4,500. The confidence interval means that the range 1,150-4,500 was computed using a method that has a 95% chance of including the population's actual abundance.'*

11.3 Methodological issues

11.3.1 Guidance for mark-recapture modelling

An ICG developed a list of issues to consider when designing, analysing or evaluating a mark-recapture abundance estimate (see Annex D, appendix 3). The authors plan further refinement of this material, which would also benefit from a review of available software for mark-recapture analysis. The Committee noted that the updated Scientific Committee Handbook will soon be uploaded onto the IWC website, and it will include the mark-recapture guidance discussed above and guidance relevant to the recent work on spatial modelling.

11.3.2 Estimation of franciscana abundance from passive acoustic monitoring

The Small Cetaceans Subcommittee requested a methodological review of certain strategies for estimating abundance of franciscana dolphins. Specifically, Andriolo *et al*. (in review) used a novel approach to passive acoustic monitoring, recording franciscana click trains (a series of echolocation clicks detected using passive acoustics), correcting for detectability using concepts from standard line transect distance sampling, and using a calibration factor (Mura *et al*., in review) to convert the total number of click trains into an estimated number of animals.

The Committee concludes that the exact correspondence between the survey and estimation of the calibration factor in these two studies allows for valid estimation of abundance and therefore the approach was considered feasible and promising. However, as the method is still under development, a precise and clear specification of the methodological definitions and assumptions, and an evaluation of the extent to which assumptions are reasonable, should be documented. These methodological and statistical issues should be reconsidered carefully if the intent is to extend the methods to other areas or species. A full report of the review is given as appendix 4 of Annex D. An ICG was established to aid the further development of the estimator and address other aspects of such analyses (Annex D, item 8.5, table 4).

11.3.3 Spatially explicit models for line-transect data

Recognising that the Committee has a strong need to develop further expertise on methods for the spatial density modelling of line-transect data, two invited experts were asked to review the development of such methods for abundance estimation for cetaceans, highlighting evolution from seminal work several decades ago to the sophisticated approaches described in SC/69B/SM/01 for eastern Bering Sea belugas. The review included wide-ranging advice on best practices and modern advances in the field (Annex D, item 4.4).

It was noted that while spatial models have been reviewed for the purpose of estimating abundance, such models can also be used to provide additional information (e.g., density within an area, for single surveys but more importantly integrating data over several years) that may be of use to the Committee. Therefore, an ICG was established to initiate a conversation with other Committee subgroups to determine how best to integrate these models more thoroughly into the Committee's work (Annex D, item 8.5, table 4).

11.4 Provide advice to the Commission on the status of stocks

11.4.1 Status of Stocks Initiative (SOSI) intersessional progress

After an intense development process over the past few years, the Committee was pleased that the SOSI website and first three SOSI assessments were ready for final review. The design employs the same layered approach used by the Secretariat across the website. The first layer or level is aimed at the non-specialist and includes a visually appealing summary page showing colourful status thermometers for each assessed stock. The second level provides more details and background information such as maps, basic assessment results and population trajectory plots. The third level contains in-depth information on the assessment methodology, results and the technical definitions underlying SOSI.

11.4.2 Review of proposed SOSI contents

The Committee reviewed the proposed SOSI website content and resolved minor issues related to: timestamps for assessments, links and labels pointing to and from SOSI pages, range maps with varying levels of detail, and a public name for the project. For a public name, the Committee **recommends** using 'Status of Whales' (SoW), while recognising that experts in the Secretariat would apply their communications and public relations expertise when deciding.

Attention: C, SC, CG, G, R
*The Committee announces and **endorses** the establishment of the Status of Whales website and presents the webpages for the first three cetacean population assessments therein.*

The importance of SOSI to the work of the Commission was noted and that its success was built upon the high-quality work conducted by the Committee over many years and its collaboration with the IUCN Cetacean Specialist Group.

11.4.3 SOSI workplan

The initial SOSI assessments were North Atlantic minke whales, eastern North Pacific gray whales, and the vaquita. The Committee **agrees** that the following stocks are the best candidates for the next SOSI assessments: North Atlantic fin whales, North Pacific humpback whales, North Pacific common minke whales, BCB bowhead whales, North Atlantic right whales, eastern North Pacific right whales and Rice's whale. The latter three whale populations have not been subject to model-based assessment by the Committee.

Attention: CG-USA
*The Committee **requests** that US scientists provide papers collating available status assessment information on North Atlantic right whales, eastern North Pacific right whales, and Rice's whale for presentation at SC70, to facilitate development of SOSI web pages for these species.*

Lastly, with SOSI launched, the Committee considered how to connect SOSI assessments with the rest of the Committee's work.

Attention: SC-IA, IST, NH, SH, SM
*The Committee **recommends** that, when Committee subgroups work on pre-assessments, Comprehensive Assessments, In-depth Assessments and Implementation Reviews, they ensure that these efforts also provide the information needed for creating or updating SOSI content. This can be achieved, in part, by collaboration with the SOSI Model Based Assessment ICG.*

11.5 Progress on previous recommendations

Nearly all previous recommendations that are not indefinitely ongoing have been completed, including a project related to simulation software to evaluate methods for abundance estimates (Annex D, item 6.1).

11.6 Workplan

The workplan can be found in Annex D. ICGs can be found in Annex W.

The Committee recalled Recommendation SC23118: 'Noting that ASI is one of the subgroups that will suffer the greatest negative impact from the reduced frequency of Committee meetings, and the reduced productivity by ASI will in turn severely impact the work of the other Committee subgroups that rely on its work, the Committee strongly recommends the continued funding of annual meetings of the Abundance Steering Group (i.e., intersessional meetings in odd years, and pre-meetings in even years), as ASI will not be able to complete its work otherwise.' Timely ASI support of the Committee's efforts required for providing advice about aboriginal subsistence whaling is a very high priority component of the work cited in this Recommendation. With this in mind, the Committee received three funding requests related to the work of ASI:

(1) 2026 Pre-meeting of the ASG to fulfil Committee subgroup Convenor requests for review of abundance estimates critical for the Committee's assessment, conservation, and management work. ASI considered this to be its highest priority request, recommending that it should be strongly endorsed as High Priority;
(2) 2025 Joint Intersessional Workshop for ASG, IST and IA to fulfil Committee subgroup Convenor requests for review of abundance estimates critical for the Committee's assessment, conservation, and management work, noting that failure to conduct reviews during this workshop, or the one above, would result in a highly problematic backlog of abundance estimates to endorse for use in the Committee's work. ASI recommended that this request should be strongly endorsed as High Priority; and
(3) 2025 Workshop on Space-Time Models for Whale Surveys with Complex Designs to teach and learn how to apply spatial and spatial-temporal models to complex line transect data, including datasets relevant to the Committee and datasets suggested by workshop participants. ASI recommended that this request should be strongly endorsed as Medium Priority.

12. BYCATCH AND ENTANGLEMENTS

12.1 IWC's Bycatch Mitigation Initiative

SC/69B/HIM/22 provided an update on the progress of the BMI. The BMI workplan for the period 2025-28 will be drafted by the BMI Coordinator in collaboration with the Expert Panel, then reviewed by the bycatch Standing Working Group and Conservation Committee, prior to IWC69. The Bycatch Coordinator has participated in the Consortium for the Conservation of the Atlantic Humpback Dolphin (CCAHD) (see Annex Q, item 5.4) and engaged with the Ghana Marine Mammal Network. As part of the BMI capacity building efforts, virtual training on the Bycatch Risk Assessment toolbox (ByRA) was provided to Thailand's Department of Marine and Coastal Resources. Further ByRA training workshops are planned in 2024 to build capacity in range countries of the CMP for South American river dolphins. The Spanish version of the ByRA manual has been updated for the upcoming training, and a Portuguese version is expected soon.

The Committee **commends** the impressive work undertaken by the BMI and its coordinator under the current workplan.

12.1.1 Bycatch in Indian Ocean, including collaboration with IOTC

The BMI programme of work related to bycatch in the Indian Ocean is described in SC/69B/HIM/22. This includes the FAO/GEF Common Oceans Program-Tuna Project which aims to address the lack of information about cetaceans, cetacean bycatch and fisheries, by undertaking a gap analysis and a spatial bycatch risk assessment for the Indian Ocean, and collaboration with the Indian Ocean Tuna Commission (IOTC), described in SC/69B/O/06. The BMI also participated in the meeting of the IOTC's Working Party on Ecosystems and Bycatch (WPEB).

IOTC Resolution 23/06 on the conservation of cetaceans includes calls for the IOTC Scientific Committee to provide advice on appropriate measures for mitigating the effects of interactions with cetaceans by IOTC fisheries and to develop best practice guidelines for the safe release and handling of encircled cetaceans. The IOTC's WPEB requested IWC's advice on this issue. The 'Guidelines for the safe and humane handling and release of bycaught small cetaceans from fishing gear' (Hamer & Minton, 2020), which were endorsed by the Committee as well as by experts from the Convention on Migratory Species, will be presented at next WPEB meeting to address this request.

To address increasing concern about the extent of cetacean bycatch in the Indian Ocean, particularly in expanding drift gillnet fisheries, an ecological risk assessment, including a productivity-susceptibility analysis (PSA), was used to investigate the vulnerability of cetaceans to bycatch in tuna fisheries, particularly in drift gillnets, pelagic longlines and purse seines within the IOTC area (Kiszka *et al*., 2023). The estimates of vulnerability by cetacean species indicate that drift gillnets presented a higher overall risk than pelagic longlines and purse seines. Species at most risk include delphinids, and, to a lesser extent, baleen whales. Risk for purse seine fisheries was lower than for other gears but was relatively high for some baleen whales. The spatial overlap between gillnet fisheries and baleen whales is limited to the northern portion of the Indian Ocean. Large-toothed whale distribution overlaps extensively with the three gears, including gillnets in the northern Indian Ocean and pelagic longlines in the southern and southwestern parts of the IOTC area.

In discussion, the author noted some limitations to the proxies used for cetacean distribution and fishing effort. Raw effort data for longlines and purse seines is now available and will be incorporated in a new analysis to avoid the need to use catch data as a proxy for effort in these fisheries. The Committee noted other ways to estimate gillnet effort (e.g., Elliott *et al*., 2023) and that the IWC project in the Indian Ocean includes funding to conduct a spatial rapid risk assessment by gear type and a workshop on bycatch gap analysis.

Attention: S
*The Committee **welcomes** the ongoing and strengthening collaboration between the IWC BMI and the IOTC. The Committee **encourages** ongoing participation in the IOTC WPEB and **recommends** that the BMI use the available funding and consultancy to build on the Ecological Risk Analysis described in Kiszka et al. (2023) using additional sources of data that provide more detailed representations of fisheries effort as well as cetacean distribution.*

Elliot and Read (2023) describe the implications of the US Marine Mammal Import Provisions Rule for IOTC Members. The Rule is the first unilateral attempt to address cetacean bycatch at a global level by leveraging the US market and requires that nations exporting certain fish and fish products to the USA demonstrate marine mammal bycatch policies comparable to those of the USA. The majority of IOTC Members have fisheries listed under the Import Rule, which may offer opportunities for improving bycatch management.

Approaches to better document, monitor and understand drift gillnet fleets, and, ultimately, bycatch, through the use of satellite imagery have been assessed for gillnet fisheries in Pakistan (Elliott *et al*., 2023). Low-cost image annotation methods and deep learning were used to provide information on a fleet where other monitoring and surveillance are missing. However, additional supporting information from local expertise and ground-truthing are necessary for estimates of fleet size.

The Committee **recognises** the value of this study as a model for future similar analyses in the Indian Ocean; that the methods could be applied in other regions with data-poor fisheries, and that the barriers to increased use of AIS were a combination of cost and fishers being reluctant to report their locations.

12.1.2 Bycatch Mitigation Initiative Peru

SC/69B/REP/02 provides a synthesis and analysis of existing information on cetaceans, fisheries, bycatch, socio-economic and supply chains in two fishing communities in Peru. Fishing effort was mapped together with cetacean bycatch and strandings to identify data gaps and stakeholders who should be involved in the project. Results indicated that the gillnet fisheries in both study areas are associated with the highest cetacean bycatch.

Although coastal gillnet fisheries have been the focus of the work it was noted that the inclusion of larger, more industrialised ports would increase the understanding of the distribution of fishing and the overlap with cetacean distributions.

Attention: S
The Committee congratulates the authors on this synthesis of information related to bycatch in fishing communities in Peru and ***recommends*** *that the suggested actions in SC/69B/Rep/02 are incorporated into the BMI Peru Pilot Project.*

12.1.3 IWC focus on cetacean bycatch in the western central Pacific Ocean

The Bycatch Coordinator attended the western central Pacific Ocean to the Western and Central Pacific Fisheries Commission (WCPFC) Scientific Committee (SC19) and proposed a number of collaborative activities (IWC, 2023b, item 12.1). However, SC19 did not support the proposal from the IWC to engage in an Areas Beyond National Jurisdiction (ABNJ) project on assessing and mitigating cetacean bycatch and its impacts on cetacean populations in the Western and Central Pacific Ocean.

The Committee notes the consideration of Small Cetaceans of the South Pacific Islands at SC69B (see Annex Q, item 2) and refers these to the BMI to assist its work in the South Pacific region could be informed by these discussions.

12.2 Collaboration on bycatch mitigation with IGOs (including FAO, Regional Fisheries Management Organisations, CCAMLR and others)

12.2.1 CCAMLR and bycatch in trawls

In 2022, SC-CAMLR reconvened its Working Group on Incidental Mortality Associated with Fishing (WG-IMAF) and requested advice from the Committee to better understand and mitigate humpback whale mortalities in the krill trawl fishery. SC/69B/HIM/08 summarises discussions within CCAMLR relating to whale entrapment. The WG-IMAF extended an invitation to the Committee to collaborate further beyond 2024. The Committee established an intersessional group to work between SC69B and SC70 with ToR in Annex J (item 2.2.1).

12.2.2 CIBBRiNA

The Coordinated Development and Implementation of Best Practice in Bycatch Reduction in the North Atlantic, Baltic and Mediterranean Regions (CIBBRiNA) project has eight case studies focusing on implementing effective mitigation measures and improved monitoring programmes. One of the most important objectives is to achieve successful cross-sectoral cooperation between fishers, regulatory authorities, researchers and other key stakeholders (SC/69B/HIM/13).

The Committee **commends** the breadth and scope of the project and is looking forward to further updates on the bycatch assessment and mitigation toolkits, which will be of value in a world context.

12.3 Review new methods and estimates of bycatch and entanglement rates, risks and mortality

Between 1997 and 2023, 78 stranded humpback whales were examined on the Peruvian coast of which 32% (*n*=25) presented signs of entanglement. There was evidence of entanglement in surface gillnets targeting sharks, tuna, and other large pelagic fish, and trammel fisheries targeting coastal fish species. The northern zone had the highest occurrence of stranding events from June to November, as well as the most related to entanglement (SC/69B/HIM/04).

The Committee **welcomes** the increased efforts in recent years by the Government of Peru to address bycatch issues and notes the opportunities for the IWC BMI and Strandings Initiatives to continue to provide support through training and capacity building programmes, including through the BMI Peru Pilot Project (see Item 12.1.2).

SC/69B/HIM/15 reports on the use of the bycatch risk assessment (ByRA) toolbox (Hines *et al*., 2020; Verutes *et al*., 2020) to create data management tools and analysis systems for marine mammal bycatch in Chilean fisheries. ByRA results will provide Chilean agencies with information on areas and seasons of bycatch risk, which will help to direct management efforts where the risk is greatest.

The Committee thanks the authors and highlights the value of the ByRA as one of the tools being used in the BMI and the IWC support for bycatch risk assessment around the world.

A total of 332 individual cetaceans were reported landed or stranded along the coast of Ghana, April 2023-March 2024. Peaks in landings coincide with the upwelling period when dolphin prey is in abundance. Drift gillnets remain the dominant gear associated with cetacean catches in all communities (SC/69B/HIM/17).

There was considerable discussion regarding the sale and utilisation of cetacean meat in Ghana, and the challenge that this poses for bycatch mitigation. The authors of SC/69B/HIM/17 noted that through collaboration with government officials, enforcement measures have been implemented in some ports which has resulted in the reduction of cetacean landings. The authors requested guidance on how to differentiate between carcasses that result from bycatch and those from targeted takes.

Attention: S
*The Committee **commends** the impressive amount of data collected by the bycatch monitoring project in Ghana and **recommends** that the IWC provide the requested technical support to the project to expand its assessment and sampling protocols through the BMI and Strandings Initiatives.*

The ByRA Toolbox was used to conduct a bycatch risk assessment for artisanal fisheries in the Arabian Sea. Visual satellite imagery over a limited study area in the Gulf of Masirah, Oman, was used to estimate artisanal fishing vessel density. The next phase of the study will focus on the development of automated detection of vessels from satellite imagery and superimposing the vessel detections with effort metrics from remote electronic monitoring studies of vessels in the same study area (SC/69B/HIM/21).

The Committee **highlights** the need for higher resolution satellite imagery to be more readily available for these types of studies. Furthermore, the Committee notes the benefits of public participation, GIS and work with fishers to enable them to map their fishing effort. This study demonstrated the versatility of the ByRA Toolbox in assessing the risk to different species from different sources, using data acquired from both manual surveys and remote sensing products. The Committee **encourages** the continuation and expansion of this work.

A total of 1,616 interviews with fishers were conducted in 2021 and 2022 over 10 Brazilian states where river dolphins occur. Interviewees provided information on the species caught and the type of fishing gear. Of the 574 respondents that reported bycatch, 45% declared that one dolphin was bycaught per year and 5% reported they had caught more than 10 dolphins. The resulting estimate was around 1,080 animals entangled per year by the fishers that were interviewed (SC/69B/HIM/25).

The Committee **commends** the impressive number of interview responses achieved. Authors clarified that no incentives were provided, and interviews were voluntary, but the high percentage of fishers not responding to the question on bycatch would have biased the bycatch rates and probably resulted in an underestimation of total bycatch.

12.4 Reporting of bycatch and entanglements (small and large cetaceans), including National Progress Reports

A query of the database of NPRs received at SC69B indicated around 70 large whale entanglements were documented. The Committee notes that this information was limited due to the disappointingly low number of NPRs submitted and further discussion can be found under Items 3.2.

12.5 Review mitigation measures for preventing bycatch and entanglement

On-demand fishing (also known as ropeless, buoyless or pop-up) has been developed to reduce entanglement risks to the endangered North Atlantic right whales in the western Atlantic. On-demand systems have been tested under commercial fishing conditions through collaborative efforts between the commercial fishing industry, researchers, government and NGOs in the USA. In 2024, NOAA continued to expand the Gear Library of on-demand systems that are lent to fishers. To effectively implement on-demand fishing, fishers, managers and other ocean users require near real-time access to subsurface gear locations to reduce fishing gear conflicts (SC/69B/HIM/02).

The Committee **commends** the amount of effort and investment being made in developing on-demand and associated geolocation systems for this endangered population.

SC/69B/HIM/14 reports on a trial of simple gear modifications to reduce entanglements in static pot gear (creels) within Scotland. Collaboration with fishers on Scotland's west coast was established to trial sinking groundline and assess its practicality. Over 1,500 gear hauls were reported, with the fishers encountering few problems with the re-roped fleets.

The Committee notes that work to reduce entanglement risks in Scottish pot (creel) fisheries had progressed, following recommendations from the Committee, through the stages of identifying the entanglement problem and gathering data on the mechanisms to a successful trial of gear modifications using negatively buoyant rope. The collaboration between fishers, researchers, government and NGOs had been maintained throughout, resulting in changes to the gear that were practical to implement and had support from the fishers involved.

Attention: CG
*The Committee **recommends** that the Scottish Government develop and implement a plan as soon as possible to enable the widespread implementation of negatively buoyant line in Scottish creel fisheries. This should include:*

(1) *Further engagement with fishers in a wider geographic area to familiarise them with the results of the trial and continue the fisher-led approach;*
(2) *A socio-economic analysis, developed in consultation with stakeholders, to set out a range of possible implementation options that could be consulted on;*
(3) *Collaboration with wider work taking place as part of the UK Bycatch Mitigation Initiative; and*
(4) *A progress update presented to the Committee at SC70.*

The National Institute of Fisheries Science (NIFS) in Korea has developed finless porpoise escape devices in stow nets since 2017 and is continuing to monitor its efficacy since 2021. The results of the research on and improvement of bycatch reduction mechanisms and their performance were reported in SC/69B/HIM/07 and Lee *et al*. (2022). The results showed a zero bycatch rate in nets equipped with escape devices. Evaluation of a ropeless system for fishing traps indicated that this is not feasible in Korean fisheries, but as an alternative, gear tensioning systems are being tested to remove any slack line.

The Committee **welcomes** the success of the modifications to the stow nets in reducing bycatch and that this could inform mitigation in similar gear elsewhere. The Committee also looks forward to further information on the gear tensioning system to remove slack from vertical lines because this is a common problem in many pot/trap fisheries.

SC/69B/HIM/16 evaluates the effectiveness of upcycled plastic drink bottles as acoustic reflectors as a low-cost mitigation method to reduce dolphin bycatch in gill and trammel nets. Trials were conducted with bottom set trammel nets and gillnets between November 2020 and February 2024 in Brazil. The results showed upcycled plastic bottles used as acoustic reflectors in bottom set trammel nets and gillnets significantly reduced bycatch of dolphins (including franciscana) by 85% and had no effect on target species catch compared to control sets.

In discussion, it was noted that the 130m spacing between bottles seemed large, and, in some areas, this would be longer than some nets in artisanal fisheries. The author responded that the aim in future trials is to reduce the spacing to 50m. In addition, the author highlighted that no bottles had been lost. However regular replacement is crucial to sustain the acoustic reflector effect and prevent bottle loss. The Committee congratulates the authors for this excellent work.

Attention: SC, NI
The Committee:

(1) ***Recommends*** *expanding the trials of plastic bottle acoustic reflectors to similar fisheries with bycatch issues in other areas in Brazil and around the world;*
(2) ***Encourages*** *the development of a manual and/or a peer-reviewed journal paper that can provide guidance to others wishing to trial the method in fisheries using similar gears;*
(3) ***Recommends*** *the BMI to include this gear modification in the toolbox of mitigation options to trial.*

12.6 Review progress on definition of r_{max} for small cetaceans for use by the Scientific Committee

At SC68D, the Committee had agreed on the need to provide guidance on estimation of the intrinsic rate of increase, r_{max}, for population models of small cetaceans. SC/69B/HIM/19 provides guidance on estimating the maximum intrinsic rate of increase, r_{max}, for population models of small cetaceans. The approaches from most to least reliable are: (1) use of empirical estimates of observed per capita population growth rates when the population is sufficiently low to be considered unaffected by density dependence; (2) estimation of r_{max} using a population model fitted to data that include estimates of abundance and removals; (3) approaches using matrix population models or life tables; (4) application of allometric/life history relationships that have been developed using meta-analyses; and (5) rule of thumb estimates.

The Committee thanks the group for this work which completed the requested tasks related to r_{max}. It was noted that the approaches described can also be applicable to large whales and there are several examples of this in SC/69B/HIM/19.

Attention: SC
The Committee ***recommends*** *that:*

(1) *Any assessments of anthropogenic mortality on small cetacean populations that use r_{max} within the assessment process use the definition of r_{max} agreed by the Committee in 2023; and*
(2) *Estimates of r_{max} should refer to the guidance in SC/69B/HIM/19 to justify the approach taken and the assumptions that have been made.*

12.7 Review proposals for best practice protocols for the release of free-swimming, entangled small cetaceans

At SC69A, guidelines on disentangling free-swimming small cetaceans were reviewed. SC/69B/HIM/03 represents a shortened adaptation suitable for use outside the USA, focusing only on boat-based interventions, with an emphasis on human and animal safety.

Attention: S, CC, CG, G
The Committee ***endorses*** *the guidelines in SC/69B/HIM/03 as Best Practices for the Disentanglement of Free-Swimming Small Cetaceans and* ***recommends*** *that they are made available through the IWC website and other dissemination channels.*

12.8 Progress on previous recommendations

12.8.1 Bycatch of common dolphins in Bay of Biscay (Northeast Atlantic)

ICES (2022) had provided new estimates of annual common dolphin mortality due to bycatch in the Bay of Biscay area.

The mean annual estimate of bycatch for the period 2019-21 inferred from strandings was 9,040 and the mean annual bycatch estimated from at-sea observations across all métiers was 5,938. In 2023, the Committee noted that bycatch levels of common dolphins in the Bay of Biscay remained a concern with no evidence of any decrease in bycatch. Therefore, the Committee recommended (SC2385) urgent action by the European Commission and relevant member states to implement advice for combinations of temporal closures of all fishing métiers of concern and application of pingers on pair trawlers that ICES (2022) evaluated as necessary in order to achieve the quantitative objectives agreed by Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and to be fully consistent with conservation objectives under EU legislation.

Using age-at-death data collected on a large number of stranded common dolphins on the Atlantic seaboard of France, Rouby *et al*. (in prep) revealed evidence of a decline in survivorship over the last two decades. The study found that adult life expectancy decreased by seven years between 1997 and 2019. The decrease in survivorship was directly attributed to high mortality pressures in the common dolphin population in the Northeast Atlantic Ocean.

The Committee notes that the estimated decrease in population growth rate of 2% could have substantial implications and increases the concern over levels of bycatch from this population. This change is also greater than would be predicted based on the estimated bycatch if it is assumed that the Northeast Atlantic population of common dolphins is a single management unit. The Committee notes the value of this approach for examining population trends in relation to bycatch, which can provide an earlier warning of a declining population than is likely to be detectable from surveys to estimate abundance.

SC/69B/HIM/10 describes an emergency measure under the Common Fisheries Policy implemented by France following several action plans deemed insufficient by the French Council of State and the EU Commission aimed at reducing bycatch of small cetaceans in fishing gear. A spatial closure is implemented for fishing gears associated with high risk of bycatch from January 22 to February 20 each year for the years 2024 to 2026. Common dolphin strandings were assessed during the closure period in 2024. The proportion of strandings showing evidence of bycatch during the closure period in previous years has been between 50% and 90%. Provisional data indicates this proportion will be around 10% in 2024. Although the data are still being consolidated, cases of small cetaceans showing signs of death in fishing gear have returned to usual levels following the end of the closure period.

In January 2022, the Spanish government approved a National Plan for the Reduction of Incidental Catches in Fishing Activities of many protected species, including cetaceans. Its objectives are to implement a bycatch monitoring programme in the Spanish fleet and propose technical solutions to reduce the bycatch of sensitive species.

The Committee **welcomes** the measures taken by France and Spain in 2024 and noted the evidence for a substantial reduction in common dolphin bycatch during the period of the fisheries closures. The spatial extent of the closures matched the area recommended by ICES, but the closure period was shorter than ICES (2022) had advised as necessary in order to achieve the quantitative objectives agreed by OSPAR. Further evaluation will be needed to estimate total bycatch in 2024 and the subsequent years (2025 and 2026) covered by the closures. This will determine the extent to which further measures may be required.

Attention: CG
*The Committee **recommends**:*

(1) *Continued work to estimate total annual bycatch of common dolphins in the Bay of Biscay;*
(2) *That a longer closure period may be needed to achieve the quantitative objectives agreed by OSPAR;*
(3) *Further examination of seasonal patterns to assess whether the closure period included the timing of the highest by-catch risk; and*
(4) *Using the three-year period of the closures to develop and implement a longer-term strategy for structural changes to fisheries in the Bay of Biscay that minimise bycatch of cetaceans and other protected species but enables continuation of a viable fishing industry, including by transitioning to fishing gears with less deleterious side-effects of biodiversity.*

12.8.2 Iberian harbour porpoise

SC/69B/HIM/12Rev1 provides an update of information on the biology, ecology, threats and conservation status of the Iberian harbour porpoise including recent data which suggests that the annual bycatch mortality rate could be around 8-10.4%. The Committee had previously noted that the level of bycatch of Iberian harbour porpoises is considered unsustainable and will consequently cause a population-level decline. In 2022, the Committee recommended immediate actions to effectively reduce, and where possible eliminate, bycatch of harbour porpoises throughout Iberian Peninsula waters.

The Spanish Government has developed a draft recovery plan for the Iberian porpoise that delimits a critical area for the species in Galician waters. The draft plan proposes the use of pingers by vessels fishing in depths greater than 80m, which is where the majority of the porpoise population is found.

Attention: CG
*The Committee **welcomes** the information from Spain regarding the draft recovery plan for the Iberian porpoise and the proposal for mitigation measures in some of the gillnet fisheries and would welcome an update from Portugal at SC70. It reiterates the previous recommendation of the Committee (SC2221) for immediate actions to effectively reduce and, where possible, eliminate, bycatch of harbour porpoise throughout Iberian Peninsula waters.*

The Committee established an ICG to respond to requests from the contracting governments directly concerned with the Iberian porpoise, to review, or provide advice on the issues listed in Annex J (item 2.8.2) and suggests that the group may consult with other experts and organisations (including the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS), ACCOBAMS and ICES) as required.

The Committee **welcomes** results from the most recent in the series of SCANS surveys and notes the importance of such surveys in the understanding of small cetacean abundance in Europe. Gilles *et al*. (2023) describe the abundance estimates of harbour porpoises and other cetacean species in the Northeast Atlantic from the SCANS-IV surveys that were completed in the summer of 2022. A study area of approximately 1.8 million km^2 ranging from the Strait of Gibraltar to southern Norway was covered. No significant trends in harbour porpoise abundance were detected in the Belt Sea or North Sea assessment units.

Owen *et al*. (2024) estimate the trend in population abundance for Belt Sea harbour porpoises over 18 years (2005-22). A mortality limit was computed applying the modified Potential Biological Removal (mPBR) method based on the regionally agreed conservation objective to restore or maintain the population to 80% of carrying capacity over 100 years with an 80% probability. Results show a negative trend in abundance over the past 18 years. The mortality limit was greatly exceeded by the current bycatch estimates.

None of the authors were present and so it was not possible to discuss this paper in detail. It was noted that the Bayesian analysis in Owen *et al*. (2024) showed a negative trend which had not been detected in the management units considered in Gilles *et al*. (2023).

Attention: CG
*The Committee **draws attention** to the high bycatch estimates for the Belt Sea harbour porpoise, which are considerably higher than the OSPAR thresholds, and **recommends** further mitigation actions. The Committee also highlights the differences in the statistical significance in the estimates of trends in abundance between analyses methods and encourages further consideration.*

The Committee notes that the European Cetacean Society (ECS) had recently adopted a Letter of Concern[5] regarding the need to prevent European harbour porpoise bycatch. ECS requested that the competent authorities urgently adopt and enforce regulations for effective measures to minimise and, where possible, eliminate harbour porpoise bycatch.

Scheidat *et al*. (2024) describes the Trilateral Wadden Sea Plan, which has specified conservation targets for the harbour porpoise related to abundance and habitat. The authors examined the methods, frequency and spatial coverage of monitoring activities for Denmark, Germany and the Netherlands and made a number of recommendations to overcome the challenges of monitoring in the complex Wadden Sea habitat.

Attention: SC, CG-Denmark, Estonia, Finland, Germany, Lithuania, Poland, Lithuania, Russian Federation
*The Committee **reiterates previous recommendations** (SC2378-SC2381) and notes that it has not received any new information at SC69B regarding the Baltic harbour porpoise and expressed concern at the lack of further closures of fisheries with high bycatch risk, which had been recommended at SC69A (SC2378). However, the Committee **welcomes** the listing of the Baltic Proper harbour porpoise on Appendix 1 of the Convention on Migratory Species at CMS COP14 in 2024 (SC2381).*

12.8.3 Franciscana

At SC69A, the Committee reviewed the status of franciscana and recommended that estimates of franciscana bycatch be presented and reviewed at SC69B (IWC, 2023b, item 12.5). SC/69B/SM/09 presents abundance estimates and mortality of franciscana dolphins in the Franciscana Management Area (FMA) Babitonga, South Brazil. Line transect boat surveys were conducted in this area in December 2023. Despite the uncertainty associated with the new abundance computed in this study, the mortality that has been recorded over the last 21 years suggest a declining population. Further analysis will be undertaken and presented to the Committee at SC70.

[5] https://www.europeancetaceansociety.eu/sites/default/files/LoC/ECS%20LoC%20Harbour%20porpoise%20bycatch%202024-04-12.pdf

Attention: CG
*The Committee **reiterates concern** at the small population of franciscana dolphin in the Franciscana Management Area Babitonga and **recommends** the Brazilian Government implement protected areas and management measures to help the conservation of this population.*

SC/69B/HIM/24 provides a review of bycatch estimates of franciscana dolphins across all management areas to assist the Committee in moving towards a Comprehensive Assessment of this species. The Committee had completed the review of the species' status at SC69A but had agreed that further review of the bycatch estimates should be conducted. Estimates of bycatch mortality are available for many of the 11 recognised FMAs and some information on bycatch is available for all FMAs.

Attention: SC
*The Committee notes that a Comprehensive Assessment of the franciscana requires accurate estimates of human-induced mortality. The Committee **agrees** that a review of bycatch estimates would advance the work of the Committee towards such an assessment and **recommends** this review be conducted by invited experts during an intersessional workshop proposed under CMP (see Items 9.4 and 24).*

The review of franciscana bycatch estimates during the workshop in 2025 will be planned by an ICG (established under CMP) with ToR to: (1) plan the review of franciscana bycatch estimates to be conducted during a CMP workshop; and (2) select invited experts for the review.

12.9 Workplan
The workplan can be found in Annex J.

13. SHIP STRIKES

13.1 Review new methods and estimates of rates of ship strikes, risk of ship strikes and mortality (including review progress on ship strikes database)
There has been an increasing number of collisions reported during offshore sailing races in recent years.

Virgili *et al*. (submitted) describe a model to estimate the number of encounters during the Ocean Race 2023, a crewed round-the-world sailing race for monohulls. The model also evaluated the potential for exclusion zones along the routes to reduce collision risk. The Committee notes with concern the high number of collisions with marine megafauna (19 collisions from 10 yachts) reported during the Ocean Race 2023. It was noted that the model predictions aligned well with actual reports, presumably because whales are not able to detect and respond to fast sailing yachts, particularly those with foils.

Attention: SC, I
*The Committee **agrees** to add an item to the workplan to update the IWC guidance for organisers of offshore sailing races including highlighting the information on Important Marine Mammal Areas (IMMAs) and relevant information discussed at SC69B. The Committee further notes that the Ocean Race route goes through several IMMAs and the newly designated NW Mediterranean Particularly Sensitive Sea Area (PSSA) and **recommends** the Expert Panel communicate this information to race organisers and encouraging them to take these into account when designing racecourses.*

SC/69B/HIM/11 describes an analysis of ship strike risk in the US Greater Farallones and Cordell Bank National Marine Sanctuaries by evaluating new and potential alterations to Vessel Speed Reduction (VSR) programs through modelling the expected effect on ship strike risk. When comparing all scenario combinations, a year-round, Sanctuary-wide VSR with 85% cooperation approximately doubles the reduction in strike risk compared to a shipping lane-only, seasonal VSR.

In discussion it was noted that the risk model assumed a constant probability of whale avoidance with vessel speed. This parameter is difficult to estimate but can have a large influence on estimates of risk based on encounter rate models.

Attention: CG-USA
*Based on the results in SC/69B/HIM/11 that showed a substantial reduction in ship strike risk and noting the feedback from the shipping industry on the advantages of permanent measures, the Committee **recommends** extending the Vessel Speed Reduction (VSR) in the US Greater Farallones and Cordell Bank National Marine Sanctuaries throughout the whole year.*

Attention: SC
*The Committee **agrees** that a better understanding of the relationship between vessel characteristics, speed and risk would inform models and **recommends** an evaluation of the data within the ship strike database to assess whether there was sufficient new information to update previous estimates of collision risk (e.g., Conn and Silber, 2013).*

SC/69B/HIM/20 provides updates on activities progressing the IWC ship strike workplan. It includes the creation of the IWC Ship Strike Expert Panel in 2023, the management of the Ship Strike Database, and development of a draft work plan for 2025-28. There have been 13 requests for data and over 20 new reports of ship strike incidents in the last year. The most comprehensive dataset that needs to be acquired and integrated is the data held by NOAA in the USA.

The Committee commends the progress on the database and continues to encourage the inclusion of data from the USA. It was noted that there were over 20 ship strike incidents in the National Progress reports submitted to SC69B and that these, and previous years, should be cross-checked to ensure they had all been included in the database.

Attention: SC, CG-USA

The Committee recognises the great value of the ship strike database but notes that its value will be greatly increased by incorporation of data from the USA. The Committee ***recommends*** *that the proposal for part of the time of the Data Manager role to continue the ingestion of datasets, work with data providers, standardise and process data and respond to data requests, as well as to support other IWC Ship Strike work, should be funded.*

13.2 Mitigation of ship strikes in high-risk areas

13.2.1 Review progress towards assessing and mitigating ship strikes in previously identified high-risk areas

The Committee noted its previous concerns about the level of ship strike mortality to sperm whales around the Canary Islands, which is considered a high-risk area in the IWC Ship Strike Strategic Plan. The Committee received updates on reports of ship strikes and abundance as well as progress on actions reducing ship strikes promoted by the Spanish Ministry for Ecological Transition and Demographic Challenge. The Committee noted that the preliminary abundance estimate for 2021 was around half of the estimate from 2010 by Fais *et al*. (2016). The Committee welcomes the increased level of engagement from government and stakeholders that had supported the research projects discussed and allowed thermal cameras to be installed on two ferries operating on the routes having the greatest overlap with areas where sperm whales are present. However, it was noted that detection systems can only reduce risk when accompanied by an appropriate response from the vessel.

Attention: CG-Spain, I, CC

The Committee ***agrees*** *that some data presented, while not fully reviewed or published, increased the level of concern for sperm whales in the Canary Islands, and reiterates the* ***recommendation*** *to implement mitigation measures that will reduce the risk of vessel-whale collisions. The Committee additionally* ***recommends:***

(1) *If the ongoing studies indicate the potential of whale detection and reporting systems to be effective, these should progressively be expanded to all fast ferry operators in areas with demonstrated sperm whale populations and ship strikes, and protocols should be developed to facilitate vessels to respond effectively to whale detections;*
(2) *Consideration of spatial-temporal measures, such as zones with reduced speeds, if the ongoing surveys, tagging and analysis of shipping indicate the potential for these to be effectively implemented;*
(3) *More research and surveys focusing on sperm whales in areas where fast ferries operate as a matter of urgency; and*
(4) *Representation from the fast ferry industry on the IWC Expert Panel on Ship Strikes to provide advice on the operational characteristics of these vessels.*

The Committee ***agrees*** *to approach the IWC Task Team steering group to consider the possible implementation of a Task Team based initiative in the Canary Islands.*

Following a proposal from Spain, France, Italy and Monaco, the International Maritime Organisation (IMO) designated a Particularly Sensitive Sea Area (PSSA) in the North-Western Mediterranean region in December 2023. The designation has four Associated Protective Measures intended to reduce ship strikes with cetaceans, particularly fin and sperm whales within the PSSA.

Attention: CG-France, Italy, Monaco, Spain

The Committee ***welcomes*** *the designation of the PSSA in the North-Western Mediterranean region and* ***reiterates*** *its previous recommendations relevant to the Associated Protective Measures (APMs), including that: (1) routing options do not seem to be possible in the area so the most effective way to reduce risk is through speed reductions; and (2) that any measures that are implemented are fully monitored and evaluated in terms of the risk reduction that is expected to be achieved, including through the use of AIS data to assess levels of industry cooperation.*

The Committee notes that the APMs rely on detection or reporting systems of whale presence to provide information on where vessels should reduce speed. The Committee ***recommends*** *that where such systems were not available, or had not been shown to be effective, then ship strike risk would be reduced for vessels which were able to reduce speed when transiting through the PSSA.*

13.2.2 Review new research relevant to mitigation

SC/69B/HIM/01 evaluated measures for reducing the risk of collisions between vessels and whales by placing observers on vessels to enable avoidance manoeuvres in response to whale sightings from the vessel. The results show that a large cruise vessel can take avoiding action in response to sightings of whales, but unless speeds are reduced, it is not possible to take effective action for whales detected closer than 1,000m ahead of the vessel.

The Committee encourages data collection on vessel responses to whale detections and notes the value of having observers on vessels to facilitate this. The data collected by observers on different types of vessels in different regions would allow assessments of the expected risk reduction that could be achieved dependent on whale species, vessel characteristics and observation conditions.

13.3 Cooperation with IMO Secretariat and relevant IMO committees

Following a number of recommendations from the Committee, the IWC co-sponsored a paper to the IMO Marine Environment Protection Committee (MEPC) in July 2023, proposing the establishment of a new traffic separation scheme south of Sri Lanka to reduce ship strike risks to blue whales and improve maritime safety. Despite strong support from the industry and several Member States, the proposal was not accepted and MEPC decided that further discussion and cooperation between the co-sponsors and the coastal state involved was needed (SC/69B/O/06).

13.4 Workplan

The Committee supports a proposal to convene a workshop on vessel strike risk assessment and associated mitigation measures. This would be held in 2025 under the auspices of IWC but funded by the USA. The objectives include developing metrics that could be consistently applied to analyses and making the associated code or platform publicly available as well as facilitating access to AIS data.

See workplan table in Annex J.

14. ENVIRONMENTAL CONCERNS

The Environmental Concerns Subcommittee focused on developing a comprehensive response to the Commission's Resolutions (2022-1) on the impacts of marine plastics on cetaceans. In addition, the Subcommittee reports on the following agenda items: (1) chemical pollution; (2) diseases of concern; (3) issues relating to stranded cetaceans; (4) climate change; (5) anthropogenic noise; and (6) habitat alteration, including concerns related to deep-sea mining. Finally, the 2024 State of the Cetacean Environment Report (SOCER) was discussed (see Annex T). Additional details about the deliberations of the E Subcommittee can be found in Annex G.

14.1 Chemical pollution

The Pollution ICG updated an Overview of the History of the IWC Pollution Initiative (Annex G, appendix 1). The work, responding to a Commission resolution from 1981, initially focused on consistency in analyses and reporting, followed by studies to evaluate mechanisms and effects of pollutants on cetaceans.

14.1.1 Review intersessional work on Pollution 2025 and any new information

Several scientific documents were reviewed by the Committee and are reported in Annex G, items 1.1 and 1.2. A recommendation for Contracting Governments and others was made related to the Contaminant Mapping Tool-CMT. Further liaison with CMS on this topic was also recommended.

Attention: CG, SC, R, ICG, S

*The Committee **draws attention** to the importance of the IWC Contaminant Mapping Tool in evaluating worldwide trends in contaminants in marine mammals, including cetaceans, and **recommends** that the IWC Contaminant Mapping Tool continues to be maintained and regularly updated.*

*Furthermore, noting that the Convention of Migratory Species (CMS) has a work area on marine pollution, the Committee **recommends** that the ICG collaborate with them.*

SC/69B/E/24 reports on the work of the ICG on Pollution 2025. This group focused on collating and reviewing recommendations on legacy and emerging contaminants detected in cetaceans, and based on this, developed a series of new recommendations. These recommendations were discussed and endorsed.

Attention: S, SC, CG, R, I, NGOs

*The Committee **expresses serious concern** about legacy and emerging chemical contaminants on various marine mammal populations, as referred to in its previous reports and many scientific publications, and summarised, among others, in workshop reports Pollution 2025 and SC/69B/E/04 and therefore **recommends:***

Strengthening of Regulations and Compliance Mechanisms: SC, CG, R

(1) *That the Committee should regularly reevaluate the efficacy of current regulations, and the monitoring protocols for Persistent Organic Pollutants (POPs), Polybrominated Diphenyl Ethers (PBDEs), Polychlorinated Biphenyls (PCBs), Polyfluoroalkyl Substances (PFAS), and Perfluoro-octane-sulfonic acid (PFOS) in cetaceans and in coastal and marine environments. To facilitate this, Contracting Governments are encouraged to report on results of efficacy studies of current regulations and monitoring protocols at SC70. The research community should establish species-specific toxicity thresholds (where lacking) to assess potential health risks to marine mammal populations effectively;*

(2) *That Contracting Governments should adopt stricter regulations on the production, use, and disposal of POPs, PBDEs, PCBs, PFAS, and PFOS ensuring that further coastal and marine contamination is less likely to occur; and*

(3) *The enforcement of compliance mechanisms should be strengthened by the Contracting Governments to ensure the elimination of further exposures of these pollutants to the coastal and marine environment.*

Capacity Building and Support: CG

(1) *The provision of additional capacity building and support from the Secretariat and Conservation Committee to assist developing countries in meeting targets set by international conventions such as the Stockholm Convention.[6] This includes technical assistance, training, and financial support to enhance monitoring, management, and disposal efforts.*

Monitoring and Ecological Assessment: R, SC, CG, NCG, IGOs

(1) *That the research community should support cross-disciplinary efforts to integrate chemical monitoring with ecological monitoring to better understand the impacts of these pollutants on cetaceans specifically and marine ecosystems more generally; and*

(2) *The inclusion of PCB tissue concentrations in assessments of marine mammal conservation status.*

Global Coordination and Prioritisation: CG, C

(1) *That governments should engage in global regulation and remediation of harmful pollutants in the marine environment through national and international bodies such as the United Nations Environment Programme, the Stockholm Convention, and the US Environmental Protection Agency. Prioritise the strengthening of international conventions, such as the Stockholm Convention, to address the disposal of PCBs and other persistent pollutants; and*

(2) *Review internal IWC workstreams on chemical and plastic pollution to identify areas of overlap, existing knowledge gaps and opportunities for collaboration.*

Producer Responsibility and Public Awareness: I, CG, NGOs

(1) *The chemical industry should develop greater producer and user responsibility, putting the burden of proof on industry to demonstrate the safety of chemicals and products; and*

(2) *Contracting Governments and NGOs should improve public awareness and education regarding chemical management and disposal to reduce the inadvertent release of pollutants into the marine environment.*

Phase-Out and Banning Initiatives: CG, IGOs

(1) *Leveraging more support for initiatives aimed at the phase-out and eventual ban of harmful chemicals such as PFAS, with specific timelines and milestones for implementation;*

(2) *Creating restrictions on the production and use of emerging PFAS chemicals and for chemical manufacturing companies and users to develop and implement mandatory strategies for phasing out PFAS as soon as possible; and*

(3) *Justifying and implementing urgent actions to reduce plastic production and use because of the role of plastic debris as a carrier for the enhanced transfer of chemical pollutants that are adsorbed on it and included in its composition (plastic additives).*

14.2 Diseases of concern

14.2.1 Review intersessional work on emerging diseases

The intersessional report on Cetacean Diseases of Concern (SC/69B/E/04) provides summaries and highlights from ongoing cetacean health and disease surveillance response efforts (published and unpublished data) from across the globe. A discussion of this report is found in Annex G, item 2.1.

[6]Stockholm Convention on Persistent Organic Pollutants, adopted by the Conference of Plenipotentiaries on 22 May 2001, Stockholm, Sweden, and entered into force on 17 May 2004.

14.2.2 Other information

Several documents were reviewed under this Item, including SC/69B/E/22 on herpes virus infections of cetaceans in Korean waters, SC/69B/E/23 on avian influenza virus screening in cetaceans in Korean waters, and a Murawski *et al*. (2024) on a case of avian influenza in a dolphin in US waters. The recent emergence of highly pathogenic avian influenza virus (HPAIV) in marine mammals presents a multifaceted challenge. Current surveillance efforts with marine mammals are likely inadequate to effectively track the spread of the virus. Therefore, enhanced monitoring programs are essential to understand HPAIV dynamics, as well as other diseases, in marine mammals and mitigate spillover risks across environments.

The Committee **recognises** that there is a global pandemic of HPAIV, killing thousands of wild birds and mammals, including pinnipeds. Recent dolphin deaths indicate significant mortality in cetaceans could also occur. National policies for avian influenza (AI) sampling exist for management of livestock and public health, yet cetaceans are not typically included in those policies even though they may move across national borders. The Committee **draws attention** to the dynamic aspects and serious impacts of HPAIV on various marine mammal populations and implications for human health. As early detection, immediate notification, and timely response, along with relevant biosecurity measures, are fundamental in devising containment and prevention strategies to protect animals, humans, and biodiversity.

Attention: CG, G

*With regard to the global pandemic of highly pathogenic avian influenza virus (HPAIV), the Committee **recommends**:*

(1) *Stranded (dead or alive) cetaceans be sampled for AI in concordance with the World Organisation of Animal Health marine mammal guidelines;*
(2) *Relevant government agencies should implement epidemiologically robust screening protocols to ensure early detection of HPAIV outbreaks in stranded cetaceans; and*
(3) *Competent government agencies provide a timely and coordinated outbreak response including rapid notification of suspect cases, details of positive cases and instigation of appropriate biosecurity measures.*

The Committee encourages updates on the HPAIV at future meetings.

Attention: SC, CG, G

Recalling recommendations SC20124 where 'the Committee draws attention to the number of serious outbreaks of cetacean diseases of concern (e.g., morbillivirus) detected since the 1980s,' the Committee now:

(1) ***Acknowledges** that diseases pose a threat to cetacean populations, alongside existing challenges, such as bycatch, entanglement, climate change, chemical pollution and marine litter; and*
(2) ***Recommends** the adoption of an ecosystem-wide, multi-taxa approach to disease surveillance in marine environments, including the identification of sentinel species – animal populations that can indicate the presence of disease in the broader ecosystem, including cetaceans.*

14.3 Strandings and mortality events

14.3.1 Review progress of steering committee for IWC Strandings Initiative

The Committee reviewed several reports from the steering committee for the IWC Strandings Initiative (SI). Those updates included input and feedback from the Strandings Expert Panel (SEP) and the Strandings Steering Group (SSG). The SEP aims to share best practice, assist in the production of globally agreed guidelines on strandings response, help collate and coordinate data from national strandings networks and serve as a network to help support and connect stranding responders globally.

Several documents were reviewed (i.e., SC/69B/E/ 14, 15 and 18) and reported on in Annex G, item 3.1. The Committee **endorses** the Terms of Reference and Membership for the Strandings Steering Group, the 2025-28 workplan for the Strandings Initiative, the ToR and Membership for the Strandings Expert Panel, and the Strandings Expert Panel Workshop Report and its recommendations. The Committee **recognises** the importance of the work of the steering committee for the IWC Strandings Initiative and its efforts in helping to develop consistent and effective responses to cetacean strandings, data collection, and sample analysis worldwide. These efforts are critical to the work that the Committee does as well as for understanding ecosystem health, however, this work requires continued funding. The precarity of funding presents an existential threat to this initiative and the Committee **encourages** contracting governments to further support this work.

The Committee **agrees** that this work is critical to worldwide stranding response efforts as well as providing information that is important to wider IWC efforts. It was further noted that the response to the HPAIV outbreak, which is expected to continue, would benefit from coordination with regards to investigation and response.

Attention: SC, CG, G
*The Committee **draws attention** to the critical need to secure sustained funding for both the stranding coordinator role and the implementation of the proposed work plan and strandings database. Therefore, the Committee **strongly encourages** Contracting Governments to support this initiative through identification and provisioning of funding or donations.*

*The Committee **recommends** the development of the initial phase of the global strandings database in collaboration with other concurrent initiatives underway by external bodies (ICES, ASCOBANS, ACCOBAMS) and that the initial database is presented at SC70 for review.*

*The Committee also **encourages** the SI to maintain communication with the Caribbean Specially Protected Areas and Wildlife Regional Activity Centre (SPAW-RAC) and use this project as a template for similar capacity building in other regions. The Committee also **recommends** a workshop to allow the Strandings Expert Panel to meet and further develop its work.*

Attention: SC, CG, G, R, CITES, S
***Recalling** a CITES Resolution (2007-4) which REAFFIRMS the important role of CITES in supporting the IWC's management decisions with regard to the conservation of whale stocks and the importance of continued cooperation between CITES and the IWC, the Committee:*

(1) ***Acknowledges** that the delay in shipping diagnostic samples across international borders, due to CITES permitting requirements, can be a significant barrier to diagnostic research on strandings;*
(2) ***Requests** the Commission re-engages with CITES and open a dialogue with Contracting Governments to facilitate the movement of diagnostic samples; and*
(3) ***Encourages** scientists through their CITES contacts to engage in a CITES Standing Committee working group on development of appropriate mechanisms to facilitate the efficient and timely movement of wildlife samples across international borders.*

14.3.2 New information on UMEs

Two papers on UMEs were discussed (SC/69B/E/01 and 03). One of these reported on a UME in late 2023 involving over 300 endangered Amazon river dolphins (*Inia geoffrensis* and *Sotalia fluviatilis*).

Attention: R, CG-Brazil
*The Committee **draws attention** to the UME of river dolphins in the Amazon that occurred in 2023 and which was associated with warm and low water related to climate change. Considering prediction of more frequent and severe climate events (e.g., extreme droughts) in the future, the Committee:*

(1) ***Encourages** the implementation of monitoring programmes to provide an early warning system to potential recurring UMEs; and*
(2) ***Recommends** that the Brazilian Government implements an Action Plan in preparation for a likely event in 2024 and subsequent years, and engaging stakeholders from different sectors of society with clear roles when attending to a river dolphin emergency in the Amazon.*

14.3.3 Other information

SC/69B/E/10 presented the first comprehensive review of cetacean stranding records in the United Arab Emirates (UAE), conducted using 125 opportunistic stranding records between 1989 and 2023, using a variety of sources.

Attention: S, SC, CG, G, R
*The Committee **commends** the strandings work in the UAE, which is an underrepresented region, and **recommends**:*

(1) *The continued collection of stranding information from the UAE; and*
(2) *Collaboration with partners in neighbouring countries in order to obtain a better understanding of the extent and distribution of cetacean strandings in the region.*

14.4 Climate change

14.4.1 Review intersessional work on climate change

SC/69B/E/09 reported on the progress of the ICG on Climate Change (Annex G, Item 4.1). A series of recent publications related to a better understanding of the impacts of climate change on cetacean populations are also noted. In discussion, the Committee was reminded that a previous proposal had been submitted for a climate change coordinator, but the proposal was not funded. It was also noted that climate change impacts should be integrated into the work of other subcommittees. Relationships between UMEs, strandings and climate change were noted, and it was **reiterated** that data from strandings are cost-effective monitoring tools.

Members of the ICG participated in CCAMLR's inaugural climate change workshop and the 14th CMS Conference of the Parties (CoP). The CMS CoP adopted a climate change resolution, pledging additional actions, including organising an in-person workshop on migratory species and climate change.

14.4.2 Review new information

A series of recommendations from the IWC Climate Change Workshop (December 2021) are found in Annex 1 of SC/69B/E/09.

Attention: S, SC, CG

Noting the ongoing work conducted by other international organisations, including CMS, towards building a better understanding of the consequences of climate change for marine wildlife, the Committee ***recommends*** *that the ICG and Secretariat build appropriate synergies with these bodies and their workstreams.*

Noting its continued interest in holding another workshop on the effects of climate change on cetaceans, the Committee ***agrees*** *to offer its support to CMS and its proposed workshop.*

The Committee further ***recommends*** *that time should be allocated at a future meeting of the Committee for a dedicated joint session across subcommittees on climate change, for which an agenda should be developed by the ICG and to which submissions should be encouraged.*

14.5 Underwater noise

14.5.1 Review intersessional work on impacts of underwater noise

SC/69B/E/21 summarised the work of the ICG on Anthropogenic Underwater Noise. It was noted that since at least 2004, the SC and CC have discussed the effects of underwater noise on cetaceans. Underwater noise has increased in recent years, from shipping, seismic exploration, drilling, construction and other sources (e.g., Jalkanen *et al*., 2022). Annex 1 of SC/69B/E/21 summarises the ICG workplan for 2024-26. Activities that occurred between 2022 and 2024 are summarised in Annex G, item 5.1.

The Committee noted the importance of liaising with the International Maritime Organisation (IMO) (and its combined instrument the International Convention for the Prevention of Pollution from Ships (MARPOL)), the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), the UN Environmental Programme (UNEP) Regional Seas programme and the Convention on the Conservation of Migratory Species (CMS), the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) and the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS), all of which have an interest in ocean noise, several with noise-specific working groups.

The Committee **encourages** governments to collate and publicise information on impulsive sounds (e.g., seismic surveys) collected as part of both public and commercial developments, wherever possible.

SC/69B/E/07 reported on a scientometric analysis of documents presented to the Committee in 2022 and 2023, focusing on acoustics and underwater noise. It was noted that the Committee's history of work on underwater noise extends more than 25 years, beginning with a pre-meeting on underwater noise in 2004, which had a major impact in both the scientific community and in terms of international policy related to underwater noise.

Attention: S, SC, CG

Noting the growing concern over the effects of anthropogenic underwater noise, the Committee ***recommends****:*

(1) *Continue networking with other international bodies in identifying priorities on underwater noise. This has two main objectives: (a) avoid duplicative work; and (b) introduce, whenever needed, or reinforce the importance of marine mammal stewardship in the agenda of these bodies to strengthen the synergy;*
(2) *Expand the scientometric review of the IWC documents focusing on acoustics and underwater noise since 2004; and*
(3) *Continued collaborations with international bodies that have work programmes to reduce underwater noise, including the IMO Action Plan to further prevent and reduce underwater radiated noise from ships and Regional Action Plans of Regional Sea Conventions.*

14.5.2 Review new information

SC69B/E/12Rev1 provides a compilation of available and emerging detection and monitoring technologies during wind farm construction, including some broad mitigation approaches. This document is a very useful compilation as the ocean renewable energy industry is expanding rapidly, and as a 'sustainable' industry, both the industry and regulating agencies are very keen to ensure that environmental impacts are minimised.

Attention: SC, S
*The Committee **notes** that the rapid development of offshore renewable energy, which will help to meet national and international greenhouse gas reduction targets, is becoming a substantial source of underwater noise.*

*The Committee **recommends** that the Secretariat reach out to member nations to offer the Committee's expertise in cetacean surveying and monitoring and on noise impacts. The Committee also notes that, as part of mitigation strategies for wind energy, several Government agencies are monitoring the acoustic environment around wind farms and large amounts of data are being accumulated.*

*The Committee therefore **recommends** that contracting governments consult with knowledgeable Committee members on the best ways to utilise these data both for conducting research on cetacean abundance and distribution, but also for assessing the potential impacts of wind energy-related noise on cetaceans.*

14.6 Marine debris

14.6.1 Develop programme to address Commission Resolution on Plastics

The ICG on marine debris (see Item 14.6.2) offered an approach for addressing the potential impacts of marine plastics on cetacean populations that focuses on the following:

(1) The completion of a carefully focused review of the effects of marine debris on cetaceans, which gives specific attention to the various definitions and location of hotspots of interaction between cetacean populations and marine debris;*
(2) The development of the IWC marine debris database[7];
(3) A virtual meeting of experts to further develop approaches to risk assessment in the context of the risk posed by marine debris to cetaceans; and
(4) Development of a strategy to help reduce the contribution made by fishing gear to marine debris, including a gear-marking questionnaire.

The Committee welcomes the work of the ICG on Marine Debris and notes that this continues to be an escalating issue both in terms of research interest and conservation implications. The Committee supports the request for funding a literature review focusing on hotspots of marine plastic pollution and the development of an IWC marine debris database. Recalling the resolution text, the Committee reiterated the recommendation to Contracting Governments to report relevant information, such as status, reduction, recycling and reuse efforts, on marine plastic pollution and plastic ingestion in stranded animals in their voluntary conservation and national Scientific Progress reports and noted that it could be a useful preliminary step to inform a future global risk assessment that identifies 'hotspots' of cetacean exposure to plastic debris.

In addition, the Committee highlights the important set of recommendations from a recent ACCOBAMS workshop regarding the impact of marine debris on cetacean populations, endorses these recommendations (Annex G, appendix 2) and looks forward to working with them.

The Committee **agrees** that river systems are frequent hotspots for marine debris and should be considered as a threat to riverine cetaceans. It was also noted that many hotspots of marine plastic debris are offshore where research is lacking. Modelling approaches may help to predict potential areas of debris accumulation to address data gaps offshore and in under-researched areas. It was highlighted that the IUCN Joint Marine Mammal Protected Areas Task Force is identifying Important Marine Mammal Areas (IMMAs), which can be used for mapping potential overlap of marine mammal and marine debris hotspots.

Finally, the Committee **recognises** that Fish Aggregating Devices (FADs) contribute marine plastics to the ocean environment that could adversely interact with cetacean populations. The Committee **recognises** the risk that FADs pose to cetaceans through the generation of marine debris and entanglement and encourages countries to consider this risk before authorising the use of FADs.

14.6.2 Review progress on recommendations on marine debris from the Intersessional Correspondence Group

SC/69B/E/16 reports on the work of the ICG on Marine Debris. This is a joint group with the Conservation Committee. Details from this report can be found in Annex G, items 6.1 and 6.2.

14.6.3 Review new information

SC/69B/E/17 reported on plasticiser contaminants in a population of Amazon river dolphins (*Inia geoffrensis*). These animals were thought to be less exposed to plastic pollution and were previously considered to be a healthy and protected population of animals. Therefore, the contaminant levels reported, and the conclusions of this paper, are of concern.

Attention: CG
*Noting the concerns raised in SC/69B/E/17 regarding the higher-than-expected levels of plasticisers in important Amazon river dolphin habitat in Brazil, the Committee **strongly recommends** every effort should be made to avoid further plastic pollution entering the Amazon river and **calls** for improved public education and outreach to support this aim.*

[7]Funding will be needed.

14.7 Deep-sea mining impacts on cetaceans

14.7.1 Review intersessional work on impacts of deep-sea mining

SC/69/B/E/08 reported on the work of an ICG on deep-sea mining (DSM) and its potential impacts on cetaceans. A discussion of this report can be found in Annex G, item 7.1. The Committee notes that deep-sea mining is still in development, though concerns were raised that commercial permitting may occur before the potential impacts to the habitat and cetaceans are fully understood and before appropriate mitigation measures are developed.

Given the potential impact and unknowns of DSM on cetacean populations, particularly deep diving ones, the Committee believes this is an issue for the IWC to be directly involved in.

Attention: SC, C, CC

*The Committee **draws attention** to the most recent Resolution of Convention on Migratory Species (CMS) regarding deep-seabed mineral exploitation activities and migratory species. In addition, at least 20 nations, including contracting governments of the IWC, have called for a moratorium or precautionary pause on deep-sea mining. Given the background information provided in SC/69B/E/08, the Committee **encourages** the Commission to consider this information intersessionally with a view to establishing a position on deep-sea mining.*

*The Committee **recommends** that the Conservation Committee discuss possible steps for the Commission to follow on this issue during its next meeting, making use of the work done by the ICG and other relevant multilateral agreements, such as CMS, as they see fit.*

*The Committee **recommends** that the Commission work, communicate, consult and partner with other international bodies, in particular the International Seabed Authority (ISA) and CMS, regarding the impact of deep-sea mining on marine animals and ecosystems, including those on which cetaceans depend.*

14.7.2 Review new information

SC/69/B/E/06Rev1 reported on a passive acoustic survey for cetaceans in a potential deep seabed mining region, the Clarion Clipperton Zone (CCZ), Eastern Pacific, in summer 2023. CCZ is an abyssal area punctuated by numerous seamounts. There is a drive to mine the CCZ for polymetallic nodules, although this is still not a commercial reality. The Committee **encourages** additional monitoring of these blocks that are identified as potential deep sea mining areas. Monitoring this area for cetacean disturbance during future deep sea mining operations would be difficult and it would also be difficult to stop mining activities once they started. The authors noted that additional research will be conducted in the coming years and that there will be new data to present in 2026, which the Committee welcomes.

In addition, the Committee notes that chronic ocean noise from DSM is expected to cause acoustic masking, lost communication space, or acoustic habitat degradation in any animal that relies on passive listening, including all cetaceans.

Attention: SC, R, CG

*The Committee **recommends** the following research be conducted, at a minimum, to adequately inform decisions relating to proposed deep-sea mining operations:*

(1) *An In-depth Assessment of the degree of overlap between areas of interest for deep-sea mining and critical cetacean habitat;*
(2) *Further analysis and modelling of sound characteristics and propagation from mining for normal operations and reasonable accident scenarios;*
(3) *Further studies and analyses of the sensitivities of cetaceans to acute and chronic exposure to sound across the range of sound frequencies potentially produced by all deep-sea mining operations (including ore transfer to transport vessels);*
(4) *Further assessments of potential impacts of deep-sea mining, including from noise, suspended sediments and light, on marine food webs; and*
(5) *A thorough analysis of how comparative assessments—e.g., noise from shipping lanes vs deep-sea mining operations; known impacts from shallow water mining vs potential impacts from deep-sea mining—might inform our understanding of the minimum potential impacts from deep-sea mining on cetaceans.*

14.8 Habitat alteration as anthropogenic impact on cetaceans

While no papers were received specifically on habitat alteration, it was decided that deep-sea mining would be discussed at future meetings.

14.9 SOCER Report (Mediterranean and Black Seas)

In response to several IWC resolutions, the SOCER provides regular updates on environmental matters that affect cetaceans. The focus region of the 2024 SOCER (SC/69B/E/19) was on the Mediterranean and Black Seas. A new five-year compendium of past SOCER reports will be prepared for 2025, with no separate SOCER that year. Details related to this report can be found in Annex G, item 9. The full SOCER is available as Annex T.

14.10 Review strategy to better integrate Environmental Concerns workplan with other Committee subgroups

It was agreed that the E Subcommittee should work with other subcommittees and working groups (e.g., HIM, ASW and SM) to better understand the combined effects of various stressors. Given the importance of cumulative effects in several of the topics discussed, it was agreed that the E Subcommittee conduct a scoping exercise on cumulative effects-related work within the Committee to be presented at SC70.

14.11 Review strategy to develop and use a 'One Health' approach

The Committee discussed many aspects of One Health, particularly during the discussion of HPAIV, under the topic of diseases of concern (Annex G, item 2), and the Committee **agrees** to keep this Item on its agenda.

14.12 Progress on previous recommendations

Progress on previous recommendations of the E Subcommittee was noted and is reflected in the DoR.

14.13 Workplan

The workplan is provided in Annex G. ICGs can be found in Annex W.

15. ECOSYSTEM MODELLING

The Ecosystem Modelling Subcommittee was first convened in 2006 (IWC, 2007) and tasked with informing the Committee on relevant aspects of the nature and extent of the ecological relationships between whales and the ecosystems in which they live. Each year, the EM Subcommittee reviews new work on a variety of issues in three areas:

(1) Ecosystem modelling undertaken outside the IWC;
(2) Exploring how ecosystem models can contribute to developing scenarios for simulation testing of the RMP; and
(3) Reviewing other issues relevant to ecosystem modelling within the Committee.

15.1 Review progress on estimating pre-exploitation and current abundance of large whale populations

To proceed with the analyses of the 'ecosystem functioning of cetaceans', pre-exploitation and current abundance estimates of large whale populations are needed as these play a fundamental role in understanding ecosystem functioning. In 2022, the Committee began to identify existing information and potential resources for those estimates in the North Atlantic Ocean and the Southern Ocean, the main areas of interest to the Committee for investigating ecosystem functioning of cetaceans. In 2022, the Committee tasked experts on the Southern Ocean and North Atlantic to provide plausible sets of pre-exploitation and current abundance estimates of populations of relevant large whale species in their respective regions from the literature, and to conduct additional analyses if needed. In 2023, new analyses were prepared, compiling the results of previously published studies to inform the discussion at the second workshop on cetaceans and ecosystem functioning (see Item 15.2). Specifically, estimates for the Southern Ocean and the Northeast Atlantic were produced to evaluate two regions with contrasting ecosystem and oceanographic structures when assessing the role of cetaceans in ecosystem functioning which are expected to differ between the two oceanographic regions.

Tables containing the results from modelling, including estimates of pre- and post-commercial whaling abundances in units of number of whales and biomass for Southern Ocean species (blue, fin, humpback and minke whales) were provided (see appendix F in SC/69B/REP/04). Of particular interest is the relatively robust agreement between the two multi-species models considered with regards to the current abundance, ratio of current and historical abundance, and biomass (current and historical) for blue, fin, minke and humpback whales. Notably, both models estimate that the current biomass of the Southern Ocean whale species is approximately 20% of the estimated pre-exploitation level. It was noted that the models assume a constant carrying capacity which should be re-examined. The similarity in biomass, abundance, and the ratio between current and historical abundance estimates for the two models reflects the importance and value of this information for modelling the role of cetaceans in ecosystem functioning.

Similarly, the best available estimates from single-species models for pre-exploitation and current biomass of whales (blue, fin, sei, humpback, minke) in the Northeast Atlantic were provided (see appendix E in SC/69B/REP/04). The estimates indicate that current abundance estimates for large whales may be 80% of pre-exploitation abundance. While the Northeast Atlantic is an ideal region to include when evaluating cetaceans and ecosystem functioning due to the large amount of data on ecosystem structures, some of the abundance estimates would need to be re-examined to ensure that they reflect abundance in the Northeast Atlantic only.

15.2 Workshop on the Role of Cetaceans in Ecosystem Functioning: Gap Analysis

Cetaceans play a broad range of roles in an ecosystem, including as predators, through conduits for nutrient transport and cycling (vertically and horizontally) and in carbon sequestration. In response to the Commission's adoption of Resolutions 2016-03 and 2018-02 on the role of cetaceans in ecosystem functioning, the Committee was asked to conduct a gap analysis by examining the existing literature, develop a plan to fill those gaps through research, and to collaborate with the CMS and other international organisations in this work.

15.2.1 Review outcomes of the joint CMS/IWC Workshop

The EM Subcommittee was tasked with engaging in this work for the Committee. After the successful completion of the first workshop held virtually in 2021, due to the COVID-19 pandemic (see SC/68C/REP/03), a second joint IWC-CMS workshop was held in November 2023 in Bonn, Germany. The second workshop, which was guided by the same terms of reference as the first workshop, included participation by ecologists, cetacean scientists, ecosystem modellers and economists given the socioeconomic analysis of the ecosystem functions of cetaceans that the Conservation Committee has been directed to complete. Following the outcomes of the first workshop, the areas of focus for the second workshop were: (1) quantification of spatial differences in ecosystem functioning of cetaceans, with focus on environments with regional ecosystem characteristics; and (2) quantification of temporal changes in ecosystem functioning of cetaceans, with focus on differences between pre-whaling and current populations and identification of information and knowledge gaps. The results of the second workshop included input from ecological modelling and on socioeconomics from small working groups as well as more general matters (see SC/69B/REP/04). The general recommendations were:

(1) The question of how the indirect whale carbon pathways operate across vertical and horizontal spatial scales needs to be addressed, both as to whether the associated mechanisms are operating (nutrient cycling; carbon fixation, export and sequestration), and if so, what is the contribution of whales relative to other ecosystem components.
(2) Develop a framework illustrating the causal linkages between the ecosystem services to which cetaceans contribute (e.g., climate regulation, nutrient cycling contributing to primary productivity, habitat provisioning), cetacean functions in the ecosystem and the potential values to beneficiaries.

SC/69B/EM/02 reported progress outside the Committee since the 2021 workshop. Whale and Dolphin Conservation (WDC) conducted a literature review (2021 onwards) to assess current knowledge in this field. Results were matched against the research and development needs identified during the workshop (SC/68C/REP/03). Areas of commonality and topics in need of further consideration were also identified. The review identified over 50 scientific papers published within the cetacean ecosystem functioning area of work since 2021. These publications vary by focal species, subject area and geographic location, but nevertheless collectively start to address the knowledge gaps recognised during the IWC-CMS workshop.

While the results of the two workshops address many of the tasks assigned to the Committee as contained in the 2016 and 2018 resolutions, further work is necessary to develop a prioritised list of research needs. This list should take into account the degree to which knowledge gaps are being addressed and the potential importance of various processes to ecosystem functioning of cetaceans. The Committee **agrees** to establish an ICG to develop this list which will then be discussed at SC70.

15.2.2 Updates from the Conservation Committee Working Group

Last year, the Committee received the report of the Conservation Committee's Workshop on Socio-Economic Values of the Contribution of Cetaceans to Ecosystem Functioning, held in April 2022 (CC/68/REP/SEVCEF/01). The Workshop reviewed analytical valuation methods and assessed their possible application under a cetaceans and ecosystem functioning framework. SC/69B/EM/01 presents advances made over the past year by the CC ICG on cetaceans and ecosystem functioning to advance ToR for a pilot project to assess the socio-economic values of the contribution of cetaceans to ecosystem functioning as requested at IWC68. To facilitate this work, the ICG created an advisory group in 2023. The advisory group developed ToR and a draft tender for the pilot project but also agreed to defer the pilot project pending the results of the second IWC-CMS workshop.

Economists and ecological scientists attended the second IWC-CMS workshop in November 2023 and revisited the pilot project ToR. The workshop experts reached agreement on the ToR priorities and noted that the pilot project consultancy should: (1) centre around creating a research framework to assess the economic role of cetaceans in supporting marine ecosystem services; (2) apply relevant models (with available ecological and economic data) to one or more specific populations/areas as a general case study; and (3) provide general guidelines on how economic valuations can be used to influence whale conservation and management, either through market or policy developments.

Discussion clarified that the economists selected through the tender process would select the specific population/area on which they would focus (limited to those population(s)/area(s) for which the highest quality data on pre- and post-whaling abundance/biomass estimates are available), could elect to focus on more than one population/area, and that ecologists with knowledge of the population(s)/area(s) selected would collaborate with the economists on conducting the analysis. Committee members had differing views regarding whether the size of the contributions of cetaceans relative to those of other marine species to the ecosystem functions in the selected area(s) should be resolved before the pilot project commenced.

15.2.3 Conclusions and future work

Based on the results of the two IWC-CMS workshops on cetaceans and ecosystem functions as summarised above (see IWC, 2022c and SC/69B/REP/04), the Committee agrees the following recommendations.

Attention: SC, R
*The Committee **recommends** that existing models, including multi-species models, and any newly developed models should continue to be used by researchers to develop more robust estimates of pre- and post-commercial whaling abundance in all oceanographic regions and, particularly, in those regions where estimates are non-existent or based on incomplete or inadequate data.*

*The Committee **recognises** that there remains a need to utilise the results from the two IWC-CMS co-hosted workshops and endeavours and, in collaboration with scientists and other stakeholders with relevant expertise, develop intersessionally a prioritised list of research needs for consideration at SC70.*

Attention: SC, CC, R
*The Committee **recommends** that existing and newly developed ecosystem based models be utilised by the scientific community to improve understanding of the full suite of ecosystem functions (e.g., nutrient cycling, carbon sequestration, biodiversity (associated with whale falls), predator/prey dynamics and habitat provisioning) of cetaceans (large and small) as well as lower trophic level organisms to explore the relative contributions of a variety of marine organisms to ecosystem functions both temporally (across time) and spatially (across oceanographic regions).*

Attention: S, SC, R
*The Committee **recommends** that scientists, research coalitions and consortiums engaged in the study of the ecosystem functioning of cetaceans, if seeking funding from international/national funding institutions or philanthropic institutions, consider seeking a letter of endorsement from the IWC Secretariat to advance research in line with the workstreams of the Committee and that will address the knowledge/data gaps previously identified by the Committee.*

Attention: S, CMS
*The Committee **recognises** the progress made during previous workshops on cetacean ecosystem functioning and **recommends** that the Secretariat continue to liaise with the CMS Secretariat to share information that addresses the knowledge/data gaps identified and, if hosting future workshops/symposia on this subject, to consider inviting collaboration from the CMS Secretariat and other international organisations (e.g., CCAMLR).*

Attention: SM
*The Committee **recognises** the growing evidence documenting the role of small cetaceans in ecosystem functioning, notes that more research/data are necessary to fully quantify the role of small cetaceans in ecosystem functioning and encourages members of the Small Cetaceans Subcommittee to join the Ecosystem Modelling Subcommittee to advance joint interests in this matter.*

Attention: CC, SC-CC, CG
*The Committee **notes** information from the CC ICG on cetaceans and ecosystem functioning of the status of the pilot project to assess the socio-economic valuation of the ecosystem functions of cetaceans consistent with the ToR and the tender developed for this project. The Committee **strongly encourages** the involvement of relevant cetacean experts in this work.*

15.3 Review results of ecosystem modelling in the Antarctic Ocean and northeast Atlantic Ocean

The Committee did not receive any papers on this subject. However, the subject was partially discussed under Item 15.1 and received further discussion at the second IWC-CMS workshop (see Item 15.2). In discussion, it was reported that ecosystem modelling work in the Northeast Atlantic is ongoing with a range of ecosystem models in use and under development, including GADGET (Globally Applicable Area Disaggregated Ecosystem Toolbox) models.

15.4 Progress on multi-species distribution models (MSDMs)

The diversity and complexity of analytical methods used for single species distribution models (SDMs) and multi-species distribution models (MSDMs) continue to increase. To ensure that the Committee can evaluate these types of models to determine whether the model results can be used to provide the Commission with management advice, an ICG was established in 2021 to advance the Committee's work on developing guidelines and possible simulation platforms for SDMs and MSDMs. Due to competing priorities during the intersessional period, limited progress was made towards accomplishing the tasks set forth in the ICG's terms. The Committee agrees that, while MSDMs remain an important topic,

this work should be put on hold for the present due to limited resources, but that it should endeavour to keep up with developments in the use of MSDMs in other fields (e.g., fisheries science). The Committee also agrees that MSDMs should be retained as an EM agenda item but that the ICG should be closed.

15.5 Progress with development of individual-based energetic models (IBEMs)

The Committee received no papers on this subject. However, as IBEMs are of interest to the EM and IST Subcommittees, this Item will remain open for future meetings, but the ICG will be closed.

15.6 Modelling of competition among whales and relationships between whales and prey

Ransijn *et al*. (2021), Johannessen *et al*. (2022) and Biuw *et al*. (2024) were presented under this Item. Discussions highlighted the difficulties in determining snapshot krill abundances and the potential importance of competition between whales and the Antarctic krill fishery. It was also noted that the functional response is an important aspect ecosystem modelling. The full discussion can be found in Annex H, item 3.2.

15.7 Standing topics

15.7.1 Progress on considering effects of long-term environmental variability on whale populations

The issue of environmentally induced variability in baleen whale demographics was last examined at a workshop held in 2010 (IWC, 2010). The question then posed was whether Maximum Sustainable Yield Rate (MSYR) is affected by environmental variability. An ICG was established but no documents have been submitted for review. The Committee **reiterates** the importance of understanding the relationships between MSYR and long-term environmental variability and expresses support for the ongoing efforts of the E Subcommittee to evaluate the impact of climate change on whales. The Committee acknowledges ongoing interest in this subject and agrees to keep this as a standing agenda item for future meetings.

15.7.2 Review progress on evaluation of krill distribution and abundance

The Committee was provided with a summary of the krill data maintained by the CCAMLR which include: (1) krill vessel catches; (2) observer sample data of bycatch; (3) observer data of krill length distributions; (4) observer sample data of Incidental Mortality Associated Fishing (IMAF) interactions; (5) active acoustic data (including vessel survey data and acoustic data from fishing vessels); (6) CCAMLR Ecosystem Monitoring Programme (CEMP) data for land based surveys; and (7) non-fishery data. While such data are useful, in discussion concerns were raised about seeking such data without first identifying the specific questions that the Committee is trying to answer or objectives which it is trying to meet. To address this, as well as to facilitate the IWC's provision of input to the review of CEMP being undertaken by the CCAMLR (see Item 15.7.3), an ICG was formed.

The Committee was informed of a recent paper by Skaret *et al*. (2023) that describes results from 10 years of annual acoustic-trawl surveys of krill around a group of islands in the southern Scotia Sea conducted between 2011-20. Average krill biomass within the survey area ranged from 1.4 to 7.8 million tons, strongly supporting that this is among the regions in the Scotia Sea with the consistently highest krill densities. While the data showed substantial spatial as well as annual variability in biomass distribution, there were no significant trends in biomass estimates over the 10-year period. In discussion, it was noted that despite the area surveyed being relatively small, the results could help characterise the inter-annual variability in krill biomass and distribution over a broader region of the Scotia Sea.

15.7.3 CCAMLR Ecosystem Monitoring Programme (CEMP) Report

SC/69B/EM/03 provides a description of CEMP, which was established in 1985 with the aim to: (1) detect and record important changes in critical components of the ecosystem, to serve as a basis for management action by the CCAMLR; and (2) to distinguish between changes due to the commercial harvesting of various species and changes due to environmental variability, both physical and biological. A review of CEMP, exploring how the programme can inform CCAMLR's revised krill fishery management approach, commenced in 2023 and included discussion of cetacean science. In recognition of the importance of considering cetaceans in CCAMLR's revised krill fishery management approach, the current review of CEMP provides an opportunity for the IWC and CCAMLR to collaborate further on developing advice on data, survey design, and subsequent analyses and syntheses, and to develop research networks to contribute to this work.

The Committee considers a proposal for IWC to provide advice to CCAMLR on the role cetaceans might play in an enhanced CEMP to be a good way to support collaboration between the two organisations. It was also suggested that incorporation of cetaceans into CEMP, or krill fishery management more broadly, may not be straightforward given how wide-ranging cetaceans can be in the Southern Ocean, and that any collaboration would benefit from a deeper consideration of specific management needs of both organisations. The Committee endorses the creation of an EM ICG (see Item 15.7.2) to address data sharing with CCAMLR, facilitate IWC input into the CEMP review, and to develop, in collaboration with CCAMLR, a high-level strategy regarding management needs for ecosystem modelling (with particular focus on whales and krill interactions, and including the influence of climate change) for both IWC and CCAMLR.

15.8 Progress on previous recommendations
There were no outstanding recommendations to address.

15.9 Workplan
The workplan is summarised in Annex H. ICGs can be found in Annex W.

16. SMALL CETACEANS
Annex Q provides the details of the deliberations of the SM Subcommittee.

16.1 South Pacific Island small cetaceans
In 2022, a review was initiated into the Small Cetaceans of the South Pacific Islands (SPI). Of the 34 species known from this vast area, many face severe impacts from oceanic fisheries, particularly four blackfish species; short-finned pilot whale; false killer whale; melon-headed whale; pygmy killer whale; and rough-toothed dolphin. A workshop was conducted in February 2024, in collaboration with the Bycatch Mitigation Initiative (BMI) and stakeholders from the South Pacific Island region, including the Secretariat of the Pacific Regional Environment Programme (SPREP). The voluntary donation from the Government of the Netherlands to support this workshop is gratefully acknowledged.

16.1.1 Workshop report
The SPI workshop aimed to summarise current knowledge on the five focal species and identify gaps hindering conservation efforts. For the purposes of this review, the SPI region includes 16 sovereign states, of which ten are IWC members: France, Kiribati, Marshall Islands, Nauru, New Zealand, Palau, Solomon Islands, Tuvalu, the United Kingdom and the United States of America. It was recognised that the comprehensive review planned would entail multiple years of study and engagement with a wide range of stakeholders. The first workshop made progress on developing a wider collaboration, with the participation of cetacean researchers, representatives from Regional Fisheries Management Organisations (RFMOs) and SPREP, in addition to summarising available literature and developing a knowledge database.

In summary, the workshop:

(1) Draws attention to the need for biological samples from small cetacean in the SPI region;
(2) Encourages researchers and organisations working with SPI small cetaceans to prioritise multi-mode data collection such as aerial surveys, photographs (e.g., for photo-ID and injury analysis), stranding records, acoustic recordings, and satellite tag tracks;
(3) Prioritises passive acoustic monitoring (PAM) studies given that recorders can be installed in remote locations and capture data (e.g., species presence) over long periods of time and on different schedules;
(4) Agrees that useful data can be collected from platforms of opportunity including whale watching and other ecotourism operations, and encourages those onboard to document sightings or encounters of cetaceans; such activities can often be conducted with help and training provided by local governments who support businesses and communities;
(5) Agrees that an inventory of currently available tissue samples, biological and behavioural data, plus documentation of fishery interactions and other conflicts or threats in the region be developed;
(6) Recognises the value of samples and information collected by onboard observer programs in the SPI region and welcomes the research by the Pacific Community (SPC) on bycatch in Western and Central Pacific Fisheries Commission (WCPFC) longline and purse seine fisheries and the collection of data on cetacean interactions and estimates of purse seine bycatch in the Western and Central Pacific Ocean (WCPO).

A multi-year workplan to address the identified knowledge gaps was developed that highlights the importance of broadening engagement with stakeholders across the region, particularly national researchers and RMFOs. As a next step, it is proposed to hold a joint workshop with SPC and the BMI to compile and assess available observer related data from field observations, with a view to developing a longer-term information sharing process.

The Committee **endorses** the recommendations formulated during the workshop and **agrees** that a steering group be established to progress its implementation.

Attention: *SC, R, BMI, RFMOs*
The Workshop held in Auckland, New Zealand, on 12-15 February 2024 (SC/69B/REP/06) reviewed the current knowledge of five cetacean species that occur within the South Pacific Island (SPI) region (short-finned pilot whales, false killer whales, melon-headed whales, pygmy killer whales and rough-toothed dolphins). The Committee:

(1) ***Draws attention*** *to the need for biological samples of small cetacean species from the SPI region and* ***encourages*** *holders of such resources to make their existence known to the research community and* ***recommends*** *that samples which may address identified knowledge gaps for the focal species are analysed within the next biennium (2025-26) so that the results might contribute to the work of this review;*

(2) ***Agrees*** *to work with the Pacific Community (SPC) to organise a workshop in the next biennium to include the relevant regional fisheries organisations, with a view to discuss the following:*

(a) *identifying existing data held within proprietary and inaccessible databases or records;*
(b) *improving observer training and data collection protocols;*
(c) *updating guidance on rules of conduct for fisheries operations, best practices, etc.;*
(d) *communicating the importance of observer-collected samples and information for small cetacean conservation in the region and focusing on population-specific impacts; and*
(e) *continuing the IWC Bycatch Mitigation Initiative's constructive dialogue with fisheries organisations on interactions and their impacts.*

16.1.2 False killer whale interactions with fisheries

An analysis of imagery taken of false killer whales (FKW) associated with the Hawaiian Islands, provided extensive information from a long-term and comprehensive study on fishery-related injuries. These data indicate that different areas had different injury levels, that females were significantly more likely to have fishery-related dorsal fin injuries than males, although rates of mouthline injuries were similar between sexes, that fishery-related injuries were found in all age groups and, in one stock, the occurrence of such injuries varied among social clusters. Several whales have been observed with multiple injuries from separate incidents, suggesting recurring encounters with fisheries. Although fishery-related injuries are prevalent, evidence from strandings is insufficient to suggest that fishery interactions are a significant cause of mortality, although only a small number of carcasses have been recovered. Mouthline injuries were also observed in pygmy killer whales and while short-finned pilot whales and melon-headed whales also exhibit such injuries, the occurrences of dorsal fin injuries related to fisheries are rare.

The FKW Take Reduction Team, established under the US Marine Mammal Protection Act, aims to address the incidental mortality and serious injury of false killer whales in the Hawaii-based deep-set and shallow-set longline fisheries. A summary of mitigation measures under this programme was presented, as well as estimates of mortality and serious injury (M&SI) rates.

The Committee welcomes the information presented and notes that the results of these intensive and long-term studies provide information that can be used as a basis for the development of studies within the SPI.

16.2 Iberian killer whale vessel interactions

In 2020, the first reports were received of a new behaviour between killer whales and vessels off the Iberian Peninsula. The killer whale population numbers some 40 individuals. It is listed as Critically Endangered and occurs seasonally along the Atlantic coastline of Spain and Portugal and in the waters of the Straits of Gibraltar. In a typical interaction, the whales will vigorously push the rudder, often rendering the vessel unnavigable, and have caused several vessels to sink. In 2021, an ICG was established to assist the Government of Spain with this issue and, in early 2024, members of the Committee and killer whale scientists were invited to a workshop in Madrid sponsored by Spain and Portugal, to assess this behaviour and develop mitigation measures, with a view to safeguarding lives at sea. In addition, the maritime community are using various, often illegal, measures of their own to dissuade the whales from approaching their vessel which could be harmful to the whales.

16.2.1 Outcomes of the 2024 Madrid Workshop

The non-IWC workshop provoked deep discussion on this novel behaviour and resulted in a suite of recommendations and actions aimed at protecting both humans and whales. Guidance was provided on immediate mitigation actions; international collaborations and reporting systems; a multi-faceted communications strategy; stranding response and post-mortem investigations; the consolidation of existing photo-ID, sightings and genetics datasets; and the need for a workshop on population modelling and genetic analysis. An advisory group was also established to provide advice on scientific and technical matters. The workshop also recommended that funding be sought for research projects to conduct genetic analysis on existing samples and to collate all available vessel location data with a view to better understanding inter-individual behavioural variation and movements in relation to vessels. Finally, the workshop recommended that the killer whale population be considered a candidate for a Conservation Management Plan (CMP).

The Committee notes all the recommendations and actions detailed in the non-IWC workshop report and remains available to provide expertise to the Governments of France, Morocco, Portugal and Spain as needed. Please see Annex Q for more details.

16.2.2 Killer whale interactions in other areas

Killer whale interactions with vessels were also reported from the Caribbean Sea, but these were few in number and quite different in nature to the behaviour described in the Strait of Gibraltar. Nonetheless, it is deemed prudent to develop a safety at sea educational campaign for killer whale vessel interactions and such information could be based on the guidelines developed for the Iberian Peninsula. The Committee **requests** that updates be provided on this emerging behaviour as

appropriate, from researchers, the Instituto Nacional de los Espacios Acuáticos (INEA) and the Ministerio del Poder Popular de Pesca y Acuicultura (MINPESCA), República Bolivariana de Venezuela.

16.3 Recommendation review

In 2018, the Committee initiated a review of all current recommendations related to small cetaceans contained within the DoR with the aim of updating these to be more appropriate to the current operational procedures of the Committee, if required. As a test case, all recommendations relevant to the Hector's and Māui dolphins were reviewed, given that substantial new information on these species had been received by the Committee in recent years.

16.3.1 Overview

Six reviewers with differing expertise in management and Hector's and Māui dolphins research worked independently to evaluate the 17 open recommendations for this species. In relation to each recommendation, each reviewer had to select one of four responses: (1) Yes: the recommendation was fully completed; (2) No: the recommendation had not been completed; (3) Partial or Amend: the recommendation was partially complete or required amendment; and (4) Do not know. No unanimous agreement was reached for any of the recommendations on Hector's and Māui dolphins, but the comments were useful in elucidating these viewpoints. The Committee **agrees** this was an effective first step and the Committee will further refine this process and will test other species.

16.3.2 Maui and Hector's dolphins

The agreed discussion on Māui dolphins can be found in full under Annex Q, item 4.2.

Future candidates for an Extinction Alert were discussed, including the Māui dolphin, as well as multiple other species, subspecies and populations of both small cetaceans and baleen whales. The Committee **agrees** that the development of more explicit criteria than those already established in 2022 (CC/68/15/01) and a detailed process to determine candidates for an Extinction Alert are needed. The Extinction Alert is further reported in Item 19.

16.3.3 Greenland small cetacean hunt

Seven recommendations pertinent to the Greenland Small Cetacean Hunt were reviewed intersessionally and the Committee **agrees** that, of the seven current recommendations, four remain open and three can be closed. The Committee **reiterates** its concern regarding the imminent risk of extirpation of three populations of narwhals in East Greenland if catches continue.

16.4 Progress with previous recommendations

16.4.1 Vaquita

The Committee welcomes the new information provided for the vaquita and **commends** the perseverance and resilience of the researchers who collect these data, often under dangerous conditions. Visual surveys were conducted in May 2023, and it was concluded that the mean estimate for the number of vaquitas seen in the 16 sightings recorded was 10.6, with a 76% belief that there were between eight and 13 seen and 65% expert confidence that there were at least 10. Acoustic sampling was conducted between July-November 2023, across 43 sites (effort = 46,203.7 hours). There were 208 acoustic encounters, across 25 sites (average encounter rate [enc/day/site] = 0.08459) (Fig. 6).

The Committee **requests** an update be provided on the upcoming survey, proposed for May 2024, at the next meeting of the Committee.

Attention: C, CG-Mexico

*The Committee **recalls** its previous concern and recommendations regarding the vaquita (Phocoena sinus) and **reiterates** the urgent recommendations of past Committee meetings. The Committee **draws attention to** the critically endangered vaquita population and the ongoing risk of gillnet entanglement which remains the priority threat to this species.*

*The Committee **commends** the Government of Mexico and the Sea Shepherd Conservation Society for their ongoing efforts to reduce illegal fishing activities in the Zero Tolerance Area (ZTA) but notes its **grave concern** at the unregulated illegal gillnet fishing that occurs elsewhere, including in the Vaquita Refuge.*

*The Committee again **strongly encourages** the Government of Mexico to urgently and fully implement the 'Agreement regulating gears, systems, methods, techniques and schedules for the performance of fishing activities with smaller and larger vessels in Mexican Marine Zones in the Northern Gulf of California and establishing landing sites, as well as the use of monitoring systems for such vessels' (September 2020).*

Attention: C, CG-Mexico

*The Committee **notes** with appreciation the efforts of the Government of Mexico, the Sea Shepherd Conservation Society and members of the IUCN Cetacean Specialist Group to prepare for a 2024 vaquita survey and strongly encourages that such surveys be conducted annually unless and until there is assurance that numbers are increasing and risks have been further mitigated.*

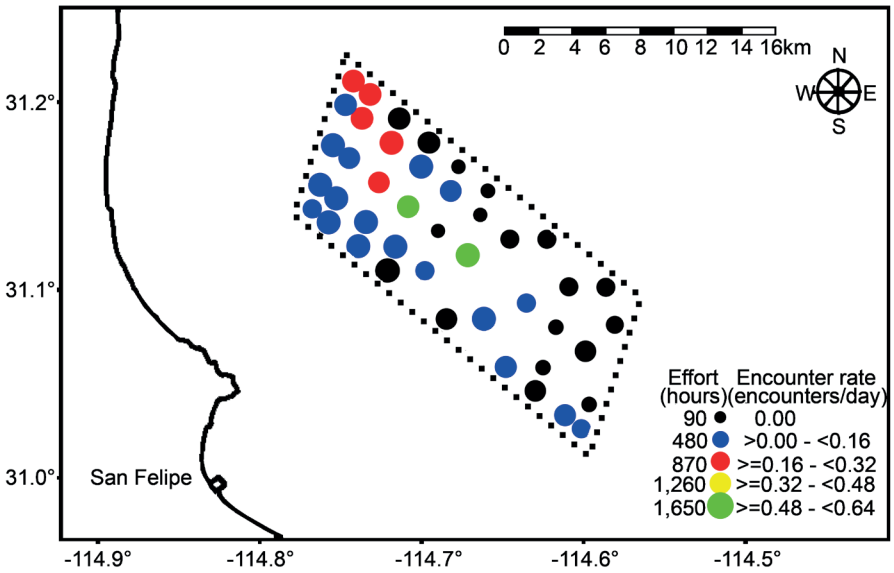

Fig. 6. The 43 sites where acoustic data were collected (July – November 2023).
The size of the circles indicates sampling effort while colour indicates detection rates.

Attention: C, CG-Mexico

*The Committee **expresses deep concern** and disappointment at the Government of Mexico's lack of progress in carrying out a rigorous and transparent assessment of alternative fishing gear. Despite decades of advice and recommendations from both Comité Internacional para la Recuperación de la Vaquita (CIRVA) and the Committee, it appears as though the process for such an assessment has not been developed, much less implemented. Had a credible assessment been completed, its results would have allowed for a transition to alternative fishing gear and the progressive elimination of gillnets in the Vaquita Refuge and throughout the vaquita's range.*

*The Committee **draws attention** to the critically endangered vaquita population and the ongoing risk of gillnet entanglement which remains the primary threat to this species. The Committee therefore strongly recommends that the fishery authorities of Mexico fulfil their responsibility to prevent the extinction of the vaquita as well as provide sustainable livelihoods for the communities in this region.*

An independent report from an investigation of social media advertising indicates that there continues to be a market for dried totoaba swim bladders in the People's Republic of China. In 2023, the quantity of totoaba swim bladders advertised surpassed previous years. The Committee **strongly encourages** all totoaba consumer and transit states to take all actions, as authorised under national laws and international conventions, to strive to eliminate demand, prevent imports/exports, and otherwise enforce all laws to stop the illegal trade of totoaba, and thus contribute to protection of the vaquita.

16.4.2 Amazon river dolphins

The declines of critically endangered botos (*Inia* spp.) and tucuxis were reported from three hydrographic regions in the Amazon, specifically the Amazonian Trapezium, the Tapajós River in the Southern Amazon basin, and the Meta River in the Orinoco basin (see Item 9.1.5). The available evidence suggests that both species have declined in density and abundance within the Amazonian Trapezium and the Tapajos River but are more stable in the Meta River. These findings are contributing to the South American River Dolphin CMP, for which more information is presented under Item 9. The Committee **commends** the research efforts that have been in these remote areas, **expresses concern** over these apparent population declines and **encourages** the continuation of this work.

16.4.3 Asian river dolphins

A CMP is approved for the freshwater populations of Irrawaddy dolphin that occur in Cambodia, Indonesia and Myanmar, with the proviso that the proponent, Cambodia, provides an updated letter of support before IWC69 (Annex F, item 3.6).

16.4.4 Atlantic humpback dolphin

The Committee has previously expressed serious concern over the declining status of the Atlantic humpback dolphin. The Consortium for the Conservation of the Atlantic Humpback Dolphin (CCAHD) was established in 2020 and comprises many members of the Committee, local researchers and government departments throughout the species' range. The update provided by CCAHD detailed the success of its activities in developing collaborations across the species range, the

work of its topic-based working groups, the formation of an email group for 90+ members, and the provision of technical and logistical support for range-country scientists and organisations. In Senegal, surveys led by a Senegalese team have been conducted, and an extensive programme of interviews of fishermen has been completed or is ongoing across the Congo, Gabon, Cameroon, Liberia, Gambia, Senegal, Guinea and Nigeria and training has been conducted in Guinea and Gabon. A questionnaire focusing on bycatch has been conducted in 13 countries in West and Central Africa, providing new information on data availability. Seven countries reported Atlantic humpback dolphin bycatch, while other countries did not have sufficient data to comment on bycatch of this species. For bycatch assessment and mitigation to be effective, funding, human resources, field monitoring, training, awareness-raising, policy reform, data sharing, and assistance with data analysis were identified as key needs.

Attention: S, SC, R, BMI
*Given the paucity of information on the Atlantic humpback dolphin bycatch, the Committee **agrees** that a more detailed and systematic review of fisheries and bycatch risk across the species' range is needed and **recommends** that the Secretariat and Bycatch Mitigation Initiative continue to support the Consortium for the Conservation of Atlantic Humpback Dolphin in efforts to document, monitor and mitigate bycatch within range countries.*

During 2022-23, surveys were conducted in the Republic of Guinea that provide new information on Atlantic humpback dolphin occurrence, abundance, distribution and habitat use. Approximately 43 individuals were encountered, including the presence of calves observed in most groups. The Committee **notes** the significant logistical challenges encountered during the surveys of Guinea waters and highlights the scarcity of resources and opportunities available to scientists in Guinea, and indeed throughout the region.

Attention: SC, R
*The Committee recognises that critical knowledge gaps hinder the effective conservation of Atlantic humpback dolphins in the Republic of Guinea and **recommends** that work should be expanded as soon as practicable, to include:*

(1) *New and existing study areas along the Guinean coast where dolphins have been reported;*
(2) *Increased capacity building for Guinean scientists and/or organisations to manage and centralise the sighting, stranding and bycatch data; and*
(3) *Passive acoustic monitoring (PAM) to better understand habitat use and potential impacts of underwater noise.*

The Committee **welcomes** the adoption of the CMS Single Species Action Plan for the Atlantic humpback dolphin and listing of the species under the US Endangered Species Act. The Committee also **commends** the efforts of the CCAHD, **encourages** continuation of their work and **requests** that progress updates on scientific research be provided at the next Committee meeting.

16.4.5 Beaked whales

In the past five years, there has been a notable expansion of research on beaked whales in China, as well as ongoing concerns about beaked whale conservation in the Northeast and Southwest Atlantic. The Committee **agrees** to continue collating new literature on these poorly understood species in the intersessional period and **requests** that an update be provided at the next Committee meeting.

16.4.6 Harbour porpoise

Progress on previous recommendations for harbour porpoise is presented in Annex J (item 2.8.2).

16.4.7 Beluga

New information on beluga abundance is presented in Annex D (item 2.1.5).

16.4.8 Franciscana

New information and a novel methodology for the estimation of franciscana abundance is presented in Annex J (item 2.8.3) and Annex D (item 4.3).

16.4.9 Lahille's bottlenose dolphin

A CMP was established for Lahille's bottlenose dolphin (*Tursiops truncatus gephyreus*) and, as such, the Lahille's bottlenose dolphin Task Team has now concluded (Annex F, item 3.5).

16.4.10 Guiana dolphin

A CMP was established for the Guiana dolphin (*Sotalia guianensis*) and, as such, the Sotalia ICG has now concluded (Annex F, item 3.4).

16.5 Review direct takes and live captures of small cetaceans

Data on direct catches of small cetaceans are available upon request from the Statistics Department of the Secretariat (statistics@iwc.int).

16.5.1 Direct takes

A verbal update was received related to a non-IWC report on a review of the impacts of hunting on small cetaceans, from 20 countries and/or regions (Brazil, Canada, Faroe Islands, Ghana, Greenland, Guatemala, India, Indonesia, Japan, Madagascar, Malaysia, Nigeria, Peru, St. Vincent and the Grenadines, Solomon Islands, South Korea, Sri Lanka, Taiwan, USA and Venezuela). The report authors predict that without urgent action to address the drivers of these hunts, the long-term survival of many vulnerable populations of small cetacean species will be at risk. The Committee **notes** that the report contains some discrepancies in the mortality figures presented for Brazil but otherwise provides useful information and presents an opportunity for researchers to collaborate with the report authors. The Committee **agrees** that the documentation and assessment of the use of small cetaceans as wildmeat will remain on the agenda of the Committee as a high priority topic.

16.5.2 Live captures

The Committee received no new information on live captures.

16.6 New initiatives and emerging issues

16.6.1 Trans-Caribbean surveys

The 'Ti Whale An Nou' programme initiated by the Caribbean Cetacean Society (CCS) has conducted 26 scientific expeditions across the Lesser Antilles and the Dominican Republic since 2021. More than 700 sightings of 22 cetacean species were recorded, providing new information from an area that has previously been poorly known. CCS stresses the importance of long-term regional collaboration in achieving effective conservation measures for cetaceans in the Caribbean region. The Committee **commends** the collaborative research efforts across the Lesser Antilles, **strongly encourages** the 'Ti Whale An Nou' programme to continue, and **requests** that updates on the scientific aspects of CCS activities be provided to the Committee, when available.

16.6.2 Indian Ocean humpback dolphin

Since 1999, the Committee has repeatedly expressed concern for the Indian Ocean humpback dolphin, which is threatened by bycatch and habitat degradation throughout the species' range. Previous recommendations highlight the need to study population parameters, conduct genetic sampling, and understand the impacts of anthropogenic activities on this vulnerable species. In response to these concerns, several members of the Committee established the Indian Ocean Humpback Dolphin Conservation Network (HuDoNet) and have enrolled 70 members from 17 range countries with the aim of enhancing conservation efforts and raising awareness of the conservation needs of this species.

Attention: SC, R
*Given the paucity of information on Indian Ocean humpback dolphins throughout its range and the vulnerable status of the populations that have been studied, the Committee **encourages** the continued effort of all HuDoNET members to complete planned activities and **recommends** that a species action plan be developed, when sufficient data becomes available, through a formal mechanism, such as the CMS Concerted Action initiative or the IWC CMP process.*

16.6.3 New and increased trade in fish products

In 2021, the IUCN World Conservation Congress adopted Resolution WCC-2020-Res-132-EN in response to bycatch resulting from the increasing international trade in croaker-fish swim bladders. New information from Bangladesh and Papua New Guinea shows that bycatch of small cetaceans has increased due to a surge in the coastal gillnet fisheries that focus on croaker species to meet this demand. Furthermore, an analysis of six croaker species, with high-value swim bladders, reveals that their ranges overlap eight threatened species of small cetacean; the vaquita, the narrow-ridged and Indo-Pacific finless porpoise, the Irrawaddy dolphin, the Indian Ocean humpback dolphin, the Australian snubfin dolphin, the Indo-Pacific humpback dolphin and the franciscana.

Attention: C
*The Committee **expresses serious concern** over the growing international demand for swim bladders from croaker (Sciaenidae) species which results in the bycatch of small cetaceans, some of which already face a high risk of extinction.*
*The Committee **requests** that the Commission express serious concern at this issue and encourage CITES to consider listing croaker species that are caught for their swim bladders in CITES Appendix I or II to ensure that this international trade is regulated.*

Table 4

Proposals approved for funding from the Voluntary Research Fund for Small Cetaceans.

Principal Investigator	Title	Completion
SM Priority	The Small Cetaceans of the South Pacific Islands: Data Availability and Collation Workshop	SC70
Bernus	Unveiling Threats, Protecting Traditions: Scientific Expedition on Small Cetaceans in St. Vincent and The Grenadines	SC70
Brannan	People and Porpoise: Engaging Fishing Communities and Mitigating Bycatch	SC70
Caroll	Genomic and ecological connectivity of false killer whales around the Southern Hemisphere and Pacific	SC70
Dolar	Assessment of Small Cetacean Populations, Fishery Bycatch, and Dolphin Watching Activities in Tañon Strait, Protected Seascape, Philippines	SC70
Estaban	Genetic assessment of an endangered killer whale sub-population	SC70
Marmontel	Analyses of samples from free-ranging *Inia geoffrensis* in the Brazilian Amazon: Assessing the health status of two populations and preparing for future threats to the species conservation	SC70

16.6.4 Small cetacean ecosystem functioning

In 2016, a Resolution recognised that cetaceans make significant contributions to ecosystem functioning and the Commission requested this Committee to review research on the topic, identify information gaps and develop a workplan to fill those gaps. This work has been conducted under the EM Subcommittee and has largely focused on baleen whales. Recent research highlights that small cetaceans also facilitate nutrient transfer and circulation in marine systems and, perhaps, their contributions may exceed those of large baleen whales in some regions. As such, it was agreed that Ecosystem Functioning would be added to the agenda of the Small Cetaceans Subcommittee.

16.7 Status of the voluntary fund for small cetacean conservation research

In 2023, donations for the Voluntary Fund for Small Cetacean Conservation Research totalling £70,187 were received from the Governments of Australia, France and the Netherlands and the Animal Welfare Institute (AWI). The fund now totals £163,155, of which £150,849 is unallocated.

The 2020 call for research proposals funded five projects on Guiana dolphins in Venezuela and Central America, by-catch mitigation for Burmeister's porpoise in Peru, research on Lahille's bottlenose dolphins in Argentina, and the Ganges river dolphin in Nepal/India. Final reports for four of these projects have been received and the remaining project will complete in 2025. The Committee **commends** the hard work of the researchers who conducted these projects, given the challenges they faced during the restrictions imposed during the COVID-19 pandemic.

As the fund is sufficient to support new projects, a call for proposals was announced in early 2024 and 12 applications were received from South America, Asia, Europe, the Indian Ocean, the South Pacific and the Caribbean. Following the review procedures described on the IWC website[8], seven projects were selected, based on strong alignment with the Committee's priority topics, the scientific merit of the research proposed and clear links to conservation (Table 4). The fund is sufficient to fully fund the selected projects while also maintaining sufficient contingency for these and ongoing projects, plus IP support for SC70.

The Committee **expresses its sincere gratitude** for all contributions and notes that these funds support critical conservation research projects of direct relevance to the work of the Small Cetaceans Subcommittee.

16.8 Workplan

Priority activities for next biennium include progressing the review of the Small Cetaceans of the South Pacific Islands and providing advice, as needed, to the range states of the Iberian killer whale, with regards to mitigating boat interactions. Tursiops taxonomy will continue to be reviewed and new information on beaked whale research and conservation will be compiled. Work will continue on the poorly documented take of small cetaceans and review of the existing database on small cetacean direct takes. Although no new task teams have been proposed, the steering group of the Task Team Initiative will remain vigilant to situations where significant and swift population declines may emerge.

17. WHALE WATCHING

Annex R provides additional details about the deliberations of the WW Subcommittee.

17.1 Assess the impacts of whale watching and swim-with-whale operations on cetaceans

SC/68B/WW/07 presented information about feeding and swim-with operations, which are rapidly expanding in the Amazon River basin. Although in some circumstances, dolphin feeding and swim-with operations can be sustainable and profitable for local populations, they can pose serious risks to both the animals and tourists. There is evidence of impacts to the dolphins as well as serious risks of zoonotic disease transmission and dolphins biting tourists.

[8] https://iwc.int/sm_fund

Both monitoring and regulating of these activities are urgently required for the entire Amazon River region. Brazil is trying to implement regulations and a resolution to protect dolphins has been passed in the State of Amazonas, but this protection should be expanded beyond the State's borders.

A challenging situation has developed in Pará, Brazil, where tourism operators are selling opportunities to feed and interact with free-ranging Inia (an endangered population endemic to the Brazilian Araguaia-Tocantins Basin, which has been called to the attention of scientific institutions and researchers as a probable new species) from shallow water platforms at riverside locations. The provisioned fish is frequently of low quality and both dolphins and humans are at risk of injury and illness, including zoonotic transmission of disease in both directions. Even though this recent activity is occurring locally, it is a problem that also extends to other Inia populations. There is a local prohibition on feeding female dolphins with calves in the State of Amazonas, but there is no enforcement, and additional national regulation, including controlling the quality of fish fed to the dolphins, is needed to protect these animals, which have been observed with mouth lesions and damaged jaws.

If this activity is pursued with adequate protection for the dolphins and tourists, it has the potential to benefit local communities and dolphin conservation, providing income to the tourism sector and thus a financial incentive to protect the dolphins. At times one dolphin may be surrounded by many tourists and without regulation or guidelines, and their enforcement, the impact of feeding these dolphins is unsustainable.

Attention: CG-Brazil, SC, R
With regard to a feeding and interacting activities related to free-ranging Inia in Pará, Brazil, the Committee ***recommends*** *that:*

(1) *The Government of Brazil and local authorities reach out to stakeholders, including local tourism operators, to restrict this type of activity until guidelines are developed and implemented, to ensure minimal impact to the dolphins. Co-management with local communities would be ideal, to promote adherence to any guidelines developed, especially as enforcement in these remote areas would be difficult;*
(2) *Local authorities, tour operators and researchers monitor the situation as systematically as possible, to determine when this activity occurs, exactly where feeding operations are located, and how often dolphins are fed;*
(3) *Studies be conducted by qualified scientists to document impacts to dolphins, including, for example, an assessment of vital rates (including calf survival) and population trends of provisioned versus unprovisioned dolphins where possible; and*
(4) *Encourage the Government of Brazil and local authorities to take note of the IWC's Whale Watching Handbook and guidelines for whale watching activities contained therein.*

The Committee ***encourages*** *the authors to report any updates to SC70.*

Wherever dolphin tourism is already occurring, every effort should be made to leverage the economic benefit the dolphins provide into conservation action, such as riverbank clean-ups by local people and tourists. The Committee **agrees** to incorporate this situation in the Amazon into the work stream of the ICG on human-induced behavioural changes. An ICG was also established under Trujillo to help facilitate future discussions about dolphin related tourism in the Amazon.

There was some discussion on tourism carrying capacity (i.e., how many boats or people are suitable) for cetacean-related tourism in the Amazon and other areas. In addition to understanding how the number of boats or swimmers might impact cetaceans, there may also be impacts on visitor experience from large numbers of boats or tourists. The Committee **encourages** the submission of papers on determining tourism carrying capacity at future meetings.

17.2 Progress with regional reviews of whale watching

17.2.1 Sri Lanka

Although no papers were received on whale watching activities in Sri Lanka, several Committee members provided updates. Parsons discussed data he had collected about whale watching activities, impacts to whales and limited enforcement of regulations. Li informed the Committee of his recent observations and concerns about multiple boats around increasingly rarely seen whales.

The Committee agrees to keep Sri Lanka on its agenda and encourages the submission of papers on whale watching activities and impacts at SC70.

17.2.2 Latin America

SC/69B/WW/05Rev1 provided an update on swim-with operations, which have been targeting an increasing number of species and occurring in more locations in Baja California, Mexico. There is concern over the risks to cetaceans and humans. A proposal has been developed for a Regional Protection Program (RPP) that could possibly control these activities and reduce risk. Mexican authorities, under the auspices of the Commission of Natural Protected Areas are now considering the RPP. The Committee **requests** an update at SC70.

Attention: CG-Mexico, S
*The Committee **strongly recommends** that the Government of Mexico adopt the current proposal for a Regional Protection Plan (RPP) for the Baja California Peninsula, where illegal swimming with cetaceans, including killer whales, Bryde's whales, and blue whales, is now occurring. This illegal activity is potentially harmful to the animals, as it can involve intense harassment to put tourists in the water near them. It is also potentially dangerous for swimmers, especially when entering the water near killer whales. An RPP has been proposed by researchers and is currently being reviewed by the Mexican Commission of Natural Protected Areas.*

*The Committee also **recommends** that the Secretariat liaise with the Commission of Natural Protected Areas and SEMARNAT, the relevant Mexican government agency, to offer assistance from Committee members to review and provide feedback on the proposed RPP. The Committee stands ready to provide its expertise during the intersessional period.*

*Finally, the Committee repeats its **strong concern** regarding the swim-with-cetacean activities around the Baja California Peninsula. As noted above, these activities are illegal under Mexican law and are not regulated. The Committee **strongly recommends** that the situation be addressed as a matter of urgency to protect the animals and swimmers.*

The Committee received an update on the dolphin watching activities in Bocas del Toro, Panama. Trejos reported that the pandemic lockdown provided a chance to collect control data on Dolphin Bay dolphins. The research highlights the significant effects of non-compliant tourism activities on dolphin habitats and behaviour, emphasising the need for enforcement of regulations (Gagne *et al*., 2022). Efforts are underway from the new head of Bastimentos Marine Park and the community organisation to designate Dolphin Bay a marine protected area.

17.2.3 Timór-Leste

The Committee Vice-Chair and the Chair of the Conservation Committee's Standing Working Group on Whale Watching visited Timór-Leste in November 2023 at the invitation of the Assosiasaun Turizmu Maritima iha Timór-Leste (ATM-TL). They met with operators to observe practices during the first year of the newly endorsed whale watching guidelines. The Committee welcomed the establishment of whale watching regulations in Timór-Leste.

Footage of whale watching activities was recorded, and other video was provided by operators. It was agreed that this rich cache of imagery has the potential to provide a better understanding of impacts to the species that are the focus of whale watching activity. The Committee **encourages** the contribution of voluntary funds to complete an analysis of the imagery and the identification of an industry source for possible ongoing funding, the Committee **requests** the help of the Secretariat in raising funds for this effort.

ATM-TL is interested in receiving: (1) training for locally recruited whale watching crews as part of local community education and development; and (2) a disentanglement training workshop, given there have been several whales sighted with trailing lines. The request from the ATM-TL to provide a disentanglement workshop will be communicated to the Secretariat and HIM Subcommittee. The Committee notes that a formal request for a disentanglement training workshop must come from a national government.

Attention: SC, C, S
*The Committee **recommends** that an analysis be conducted of the video and photographic imagery provided by Timór-Leste whale watching operators to the co-convenors of the Timór-Leste correspondence group, with results to be presented at SC70. These results would include describing the reactions of cetaceans to swim-with encounters and other whale watching approaches. It **recommends** the intersessional group and a local whale watching operator prepare a proposal for this analysis, which would include a budget and a request for funding via voluntary contributions from parties interested in capacity-building in the South Pacific and in conservation of cetaceans in this region. The Carole Carlson Memorial Fund, held by the Secretariat, is also a potential source of funds for this project and the proposal procedure for the Voluntary Conservation Fund should be followed. The Committee **requests** that the Secretariat announce the need for funding this analysis to the Commission at IWC69 or through an intersessional circular and explore identifying an intern through its internship programme with Oxford and Cambridge Universities to conduct this analysis.*

*In addition, the Committee **recommends** that a workshop for training of local whale watching operators in Timór-Leste, based on the IWC General Principles for Whale Watching, be organised and conducted during the biennium, as requested by the Assosiasaun Turizmu Maritima iha Timór-Leste would be best organised and conducted under the auspices of the Standing Working Group on Whale Watching of the Conservation Committee.*

17.2.4 Southern Ocean Sanctuary

See Annex N (appendix 3) under 'Tourism and Whale Watching'.

17.2.5 Other priority regions

Lysenko and Evangelista reported that the Dominican Republic has guidelines and regulations for whale watching activities in Samaná Bay and that research is needed about the impacts to cetaceans given the increase in whale watching activities.

The Committee **notes** that the Society for Marine Mammalogy biennial conference will be held in Puerto Rico in 2026 and provides an opportunity to organise and hold a workshop (see Item 17.6) on whale watching in the Caribbean region. The Committee **agrees** to establish an ICG to develop a proposal for a workshop at the Puerto Rico conference.

Li reported that whale watching is developing in China. There are some good coastal locations for this activity, targeting small and large cetaceans. Regulations are being developed, but research is needed to determine the potential impacts of whale watching; studies are underway. The Committee **agrees** to consider China as a future priority region and invited Li to present research results to the Committee at future meetings.

17.3 Collaborative work within the IWC

17.3.1 Update on the IWC's Whale Watching Handbook

The Committee received an update on work on the Whale Watching Handbook (SC/69B/WW/04). The update included possible priorities for new content and a revised table of literature. The Secretariat requested that Committee members continue to submit papers to keep the table up to date.

17.3.2 Communication with Conservation Committee's Standing Working Group on Whale Watching

The Committee was informed that the Conservation Committee's Standing Working Group on Whale Watching (SWG) welcomed Catherine Bell as the new chair. SWG membership remains open, particularly for new members from Asia and Africa.

The Secretariat has been engaged with other organisations, such as the Indian Ocean Rim Association (IORA) and its Sustainable Whale Watching Network members; participating in a Stakeholders Workshop with Ocean Governance; and communicating with the Convention on Migratory Species (CMS) on whale watching issues.

The IWC's Whale Watching Strategic Plan and workplan both expire this year (2024) and new plans have been drafted (see SC/69B/WW/06, Annex 3 and 4) for comment by the Committee. A brief discussion confirmed that the CMS Guidelines for Recreational In-Water Interactions with Marine Wildlife should be incorporated in the Whale Watching Handbook. If the Committee has additional comments, they should be provided to the Secretariat well before IWC69.

Regarding the draft workplan for 2025-28 (Annex 4 of WW/06), it was noted that Objective 3 (Research and Data Collection) was most relevant to the Committee. Action 3.1, regarding the Modelling and Assessment of Whale Watching Impacts (MAWI) initiative, should continue. The European Cetacean Society (ECS) Annual Conference, which will be in the Azores in 2025, may be an opportunity to pursue a modelling workshop.

The first bullet point of Action 3.2, regarding a long-term integrated research programme, was an ambitious idea that has proved impractical to pursue. However, utilising data collected on whale behaviour in relatively undisturbed areas during the pandemic (see Item 7) as baseline data for impact studies is one possible way forward.

Finally, regarding Action 3.4, on integrating social science into the work of the Committee, it was suggested that an ECS workshop might help progress this action as well. An intersessional correspondence group was created to prepare a workshop proposal. The IUCN's Integrated Conservation Plan for Cetaceans (ICPC) recently held a human dimensions workshop. The report from that workshop is being published in Aquatic Mammals and may be helpful for the ICG.

Attention: SC

*The Committee **agrees** that Action 3.4 of the proposed workplan for 2025-28 of the CC Standing Working Group for Whale Watching, regarding the integration of social sciences into the work of the Whale Watching Subcommittee, should be a focused pursuit during the biennium. It **agrees** to establish an ICG to prepare a workshop proposal for the next conference of the European Cetacean Society in the Azores in 2025, where social scientists will be identified and invited to participate to help develop an approach to integrate social science with the ecological research typically considered by the Whale Watching Subcommittee, to inform whale watching management and future research projects. Parsons was appointed convenor.*

With regard to the communications plan, the Joint Conservation Committee-Scientific Committee Working Group created a Steering Group to guide the plan and address relevant issues as they arise.

Attention: SC, S

*The public, research communities, governments and other whale watching stakeholders may be unaware of the work of the Whale Watching Subcommittee (WW) and Standing Working Group on Whale Watching (SWG) and it is an ongoing objective of both to seek new and effective ways to communicate their work to these audiences. The Committee **recommends** that:*

(1) *All members of the Whale Watching Subcommittee work intersessionally to promote the Handbook and other outputs of WW and the SWG, via individual and organisational social media and other means (e.g., mentions in presentations at conferences);*
(2) *Committee members communicate potential sources of outside funding for the joint WW/SWG communications plan to the Secretariat as soon as possible; and*
(3) *The Secretariat approaches these potential funding sources to seek funding specifically for the communications plan and the Carole Carlson Memorial Fund.*

17.3.3 Collaboration with other SC subgroups on platforms of opportunity and citizen science
No papers were received under this Item.

17.4 Reports from Intersessional Correspondence Groups
SC/69B/WW/01 reported on the activities of ICG on human-induced behavioural changes (HIBC). Members of the group have submitted a paper on 'out of habitat' marine mammals, which is in review. There are two workshop reports available (Anon., 2021; 2023; Nunny and Simmonds, 2020) and several new publications on the deleterious effects of humans on cetaceans. The ICG concluded that the conservation implications of human-induced behavioural changes are becoming more apparent and better documented. See Annex R, item 5, for more details.

The Committee **agrees** to maintain all current ICGs (see Annex W) and requests that they report back on progress at SC70.

17.5 Progress on previous recommendations
Of the recommendations still open from 2018, the Committee **agrees** to close those that are either procedural or directives to the Committee or SWG, but to leave open those related to the longer-term workstream.

17.6 Workplan
In addition to developing a workplan for the next biennium, there was an in-depth discussion of the future direction of the WW Subcommittee driven by the Committee's shift to biennial meetings. It was noted that virtual sessions would allow intersessional work to be conducted by the WW Subcommittee.

Future work could focus each meeting on either one or two of the five topics under Item 17.2, or on specific regions (see Item 17.3). However, until the Commission provides guidance on funding for the next meeting, it is difficult to determine the future of the WW Subcommittee. The Committee **agrees** that the SC70 agenda should prioritise emerging technologies in whale watching operations and other tourism activities focused on marine life.

It was noted that an annual digest of publications on whale watching impacts is a valuable and efficient way for the Committee to review and consider relevant research.

Attention: SC
*Noting the shift to biennial meetings, the Committee **recommends** that intersessional work for SC70 include the preparation of a digest of peer-reviewed papers published during the biennium, as were prepared for previous meetings (e.g., Parsons et al., 2018a, 2018b). These digests have proven to be useful in previous meetings. The digest should focus on emerging technologies but could include papers addressing all topics on the WW Subcommittee agenda (Annex R, appendix 1).*

The Committee **agrees** that it would be valuable for the ICGs and the WW Subcommittee to meet intersessionally. A virtual meeting of the WW Subcommittee would likely be relatively brief (e.g., a half-day).

It was noted that several studies on the impacts to cetaceans from whale watching activities took place during the COVID-19 pandemic (e.g., Gagne *et al*., 2022; Longden *et al*., 2022), essentially collecting baseline data for these areas. The Committee **encourages** results of this research to be presented at SC70.

As funding issues have contributed to the Committee moving to biennial meetings, options for seeking external funding for the whale watching work stream were discussed. The whale watching industry, governments, NGOs and IGOs are potential external funding sources. The already-established Carole Carlson Memorial Fund could provide an avenue for the Secretariat to receive funding for the Committee's whale watching workplan. The Committee will seek assistance from the Secretariat's fundraising staff. If the WW Subcommittee is to seek outside funding, it needs to better communicate its work to a wider audience. See Annex R (items 2.1 and 4.2) for ideas about how to approach this need.

The workplan can be found in Annex R. ICGs can be found in Annex W.

18. WHALE SANCTUARIES

18.1 Review of the Southern Ocean Sanctuary (SOS)
The Southern Ocean Sanctuary (SOS) was established in 1994 in Paragraph 7(b) of the Schedule in accordance with Article V of the International Convention for the Regulation of Whaling (ICRW). The Schedule specifies that the Sanctuary 'shall be reviewed ten years after its initial adoption and at succeeding ten-year intervals'. In 2003, the Commission directed the Committee to undertake the first review in 2003, which was completed in 2004 (IWC, 2005). The second review was performed in 2014-16 (IWC, 2017a). The terms of reference of the third review were agreed in 2022 (IWC, 2023a) and can be found in Annex N, appendix 2.

18.1.1 Information for the Southern Ocean Sanctuary review
A non-exhaustive compilation of research conducted in the SOS since 2016 (SC/69/B/SAN/02) assisted the Committee to review the SOS. A selection of scientific research projects conducted in the contiguous Indian Ocean Sanctuary (IOS) was also included. The compilation suggests that the SOS and contiguous IOS have allowed for the conduct of scientific research useful for meeting IWC objectives.

The Committee noted that the 2024 review submission portal was useful to the SOS review and that the portal could be used for submission of material related to other Sanctuaries.

Attention: SC, CG, S, R
*The Committee **recommends** the submission portal established for the 2024 decadal review of the SOS to be maintained and **requests** the Secretariat to notify SC members, contracting governments and other interested parties to submit information about scientific research conducted in existing and proposed IWC sanctuaries through the portal on an annual basis.*

*The Committee also **recommends** that the Secretariat helps to maintain and provide information for the compilation drafting group.*

18.1.2 Southern Ocean Sanctuary review report

The Committee received the report of the SOS Expert Review Panel, comprising M. Tetley, C. Olavarría and S. Childerhouse (SC/69B/SAN/04, Annex N, appendix 3), which was prepared based on six review criteria (Table 5).

Further details and conclusions from the Expert Review Panel can be found in Annex N, table 1.

The Committee broadly supports the conclusions of the Expert Review Panel (Annex N, appendix 3; SC/69B/SAN/04).

The Committee recalls the SOS Management Plan, adopted by the Commission in 2018 (IWC, 2018d), which included updated, specific, measurable objectives, and identified research, implementation actions and performance measures, many of which relate to potential threats to whale populations within the Sanctuary. The refined objectives within the Management Plan expanded the objectives of the SOS from the management of commercial whaling into other areas, including (but not limited to):

(1) Objective 1: Contribute to the rehabilitation of a marine ecosystem damaged by the overexploitation of whales and allow for the restoration of a complex of whale species and populations;
(2) Objective 2: Secure a long-term satisfactory habitat for cetaceans and other marine life;
(3) Objective 3: In combination with the Indian Ocean Sanctuary, fully protect at least one population of each of the great whales throughout its migratory range and life cycle, i.e., on feeding and breeding grounds, to provide for their long-term conservation;
(4) Objective 6: Allow for coordinated research on the effects of environmental change on whale stocks. [9]

While there is no specific mechanism within the Convention to address these broader objectives, they were adopted by the Commission and, therefore, represent the direction provided to the Committee relating to the SOS. The SOS Management Plan identifies potential approaches and actions that the IWC can take to achieve these objectives, which include:

- Encouraging Contracting Governments, range States, particularly in the Indian Ocean, IGOs and NGOs to address threats identified by the IWC;
- Encouraging complementary actions from international agencies (e.g., CCAMLR, IMO);
- Developing and maintain collaborations through, e.g., the Southern Ocean Research Programme (SORP), CCAMLR, Scientific Committee on Antarctic Research (SCAR), Scientific Committee on Oceanographic Research (SCOR), and Southern Ocean Observing System (SOOS).
- Contributing information about whales and their habitats to relevant international research programmes.

Given these substantive changes to the objectives of the SOS over time, it is appropriate to seek advice from the Commission about future reviews of the SOS: specifically, how frequently, these should be carried out and using what criteria.

The Committee **welcomes** the thoughtful and useful review conducted by the Expert Review Panel. The Committee notes that the criteria used for both the second and third decadal review of the SOS (see Annex N, item 4.3) are now 10 years old and were developed prior to the Commission adopting the SOS Management Plan in 2018. The SOS Management Plan has considerably changed the objectives of the SOS and, therefore, the terms of reference for the review of sanctuaries adopted in 2014 are no longer consistent with these new objectives.

Attention: SC, S, CC, C
*The Committee **agrees** that the 2014 terms of reference for sanctuary review need to be revised and updated to align them with the SOS Management Plan.*

*The Committee **recommends** a report on updating sanctuary review criteria, broadly consistent with the SOS Management Plan, be presented to SC70 for consideration.*

[9]The 'Objective' numbering follows that of the SOS Management Plan.

Table 5

Review criteria developed for the review of the SOS by an Expert Review Panel and the Conclusion of the Committee based on the review.

Review criteria	Committees Conclusions
1. Assess the present and potential threats to whale populations and their habitats in the area of the SOS and how the Sanctuary addresses this.	In conjunction, Paragraph 10(e) of the Schedule (the moratorium), adopted by the IWC in 1982, and the SOS have been effective in addressing the potential threat of commercial whaling for all species and habitats within the SOS, while noting that Special Permit whaling could still occur within the SOS. While the SOS does not provide any formal protection from most of the other threats identified (e.g., climate change, vessel traffic), it does provide a strong focus and justification for research and the promotion and implementation of protection mechanisms for whale populations and their habitat through other international and national mechanisms. Through these collaborations, the IWC has been successful in promoting and supporting the implementation of a wide range of measures to protect whales from a variety of threats within the SOS.
2. Consider whether the Sanctuary is consistent with other measures to protect whales from anthropogenic and other environmental factors.	The SOS, in conjunction with the moratorium and adjoining IOS, provides comprehensive protection against commercial whaling activities by IWC member states. This measure directly contributes to the preservation of whale populations by eliminating an important anthropogenic threat. It is noted that many other international agreements and organisations refer directly to the SOS when considering wider Southern Ocean ecosystem issues. It is likely that the fact that the SOS exists provides positive impetus for other organisations to both consider and manage threats to whale populations other than whaling. Overall, the SOS is consistent with other measures to protect whales from anthropogenic and other environmental factors.
3. Assess the effects of the Sanctuary in terms of the protection of whales in breeding areas, feeding grounds, and/or migratory routes.	The SOS, moratorium and adjoining IOS provide complete protection from any existing or future commercial whaling by IWC member nations (and are likely to deter non-IWC members from conducting whaling as discussed in SC/69B/SAN/04) for the populations of baleen whales that breed in the Indian Ocean. This includes their feeding and breeding grounds and also migratory routes. With respect to the remainder of the Southern Hemisphere, the SOS provides protection for Antarctic feeding grounds but there is no equivalent low and mid latitude protection afforded by an IWC Sanctuary although, it is noted that a South Atlantic Whale Sanctuary has previously been proposed.
4. Assess the effects of the Sanctuary in terms of international agreements concerning biodiversity and conservation of nature.	The SOS provides a strong focus and justification for the promotion and implementation of protection mechanisms for whale populations and their habitat through other international and national mechanisms. We note that many of these other international agreements and organisations refer directly to the SOS when considering wider Southern Ocean ecosystem issues. The existence of the SOS provides information and positive impetus for other organisations to both consider and manage threats to whale populations other than whaling.
5. Evaluate whether the Sanctuary allows for the conduct of scientific research useful for meeting IWC objectives or coordinated integrated research and monitoring programmes across the range of issues of global relevance.	The SOS serves as a pivotal platform for conducting scientific research that aligns with IWC objectives and contributes to global marine conservation efforts. Coordinated long-term and ongoing research and monitoring programs, together with standardised reporting processes, underscore the SOS's commitment to facilitating comprehensive and systematic research endeavours. This initiative has enabled the collation of important data on whale populations, their habitats, and the broader Antarctic marine ecosystem, thereby supporting the IWC's scientific and conservation mandates.
6. Provide advice on whether the Sanctuary is consistent with the precautionary principle	The SOS's establishment and ongoing management take into account the Precautionary Approach as specified in Principle 15 of the Rio Declaration on Environment and Development in 1992 (commonly known as the precautionary principle).

18.1.3 Other relevant Southern Ocean Sanctuary information

SC/69B/SAN/01 noted that the sub-Antarctic island at 54°15'S 36°45'W was a major centre of whaling in the first half of the 20th century and lies within the SOS. Visual and acoustic surveys of baleen whales were carried out in the austral winter of 2022 and 2023, to investigate the abundance and density of krill and krill-feeding predators around the island. More details are found in Annex N, item 4.1.

18.2 Progress on previous recommendations

18.2.1 Indian Ocean Sanctuary

In response to previous recommendations (SC19156), SC/69B/SAN/03Rev2 provided an update on the Indian Ocean Cetacean Network (IndoCet), which focuses on cetacean research and conservation in the south-western Indian Ocean (SWIO). The network maintains a website, as well as a newsletter and social media pages. Whale disentanglement workshops in partnership with the IWC were held in Reunion and Mayotte (June 2023) and in Kenya (March 2024). A new initiative called the 'Network of Marine Mammal Observers' (NeMMO) aims to increase the quality, quantity and availability of cetacean data in the SWIO through MMO's working onboard platforms of opportunity. Other ongoing initiatives include the COMBAVA project, a passive acoustic monitoring initiative conducted in the coastal waters of Reunion, Madagascar, Kenya, Tanzania, and Mozambique in 2020, which assessed humpback whale song structure and temporal distribution in the SWIO; the Quieter Western Indian Ocean (QWIO) project, an assessment of threats to marine megafauna associated with shipping (underwater radiated noise, ship strikes); and the Indian Ocean Humpback Dolphin Conservation Network (HuDoNet), a consortium focused on *Sousa plumbea*. More details can be found in Annex N, item 5.1.

The Committee thanked the compilers of SC/69B/SAN/03Rev2 for this very useful update detailing ongoing, collaborative work in the Indian Ocean Sanctuary (IOS). Moreover, the Committee was impressed with IndoCet's accomplishments and commends the coordinators for driving this work forward. The Committee welcomes further updates about cetacean research and conservation work in the Indian Ocean Sanctuary. Additional information relevant to the IOS was presented in SC/69B/SAN/02, SC/69B/CMP/05 and de la Mare *et al.* (2016).

18.2.2 Other

No other progress on previous recommendations was reported.

18.3 Workplan

The workplan can be found in Annex N.

19. EXTINCTION ALERT

SC/69B/O/01 provides an evaluation of effectiveness of the Extinction Alert (EA) for the vaquita – the first extinction alert issued by the IWC. It also outlines the history of the initiative, noting that it emerged out of discussions during the pandemic when many Committee members expressed their desire to better convey urgent concerns about cetacean populations in decline to non-scientific audiences. This eventually evolved into a specific approach and methodology that was presented and approved at IWC68. The first IWC Extinction Alert was then developed for the vaquita and released to the media on 7 August 2023.

No dedicated resources were allocated to this initiative. Assistance was sought from members of the Committee to maximise outreach and impact, who all received an outreach pack, that included the full EA text, key messages, social media resources and images/video. Some of this material was available in French, Spanish and Chinese (subject to the availability of volunteer translators). Committee members were asked to share this as appropriate with their networks, colleagues and any other relevant contacts. All outreach material was also made available on a new dedicated page of the IWC website. In addition, the press release and select supporting material was sent by the Secretariat to a targeted media distribution list.

Evaluation of the EA's success was *ad hoc* – compiled by the Secretariat, reliant on free-to-use news monitoring services and third-party reports, and therefore not comprehensive. Even so, the Committee was informed of coverage in broadcast, print, digital and social media from 15 countries, as well as media covering wider regions, such as Reuters, the Arabic News Network and BBC World TV and radio. More details are available in SC/69B/O/01.

As a follow-up, a survey of Committee members asked what actions they had taken and sought their evaluation of how effective the EA had been. Few responses were received. The overall impact is not easy to judge, but some of these survey responses did report discussions prompted by the EA. The consensus was that the amount of media coverage must have increased awareness of the vaquita's plight, but it's very difficult and too early to judge whether this awareness translates into any changes to policy or approach among key stakeholders. One encouraging fact is that Mexico topped the list of countries viewing the IWC website on 7 August for the first time.

The Committee was informed that, in terms of media impacts, the EA could be seen as a success, but that part of its effectiveness related to the novelty as this was the first time the IWC had issued such a statement. This may not be in play to aid future Alerts. The authors of SC/69B/O/01 suggested that EAs should be used sparingly so that the tactic does not lose value, and that, in addition to the requirement that the taxon concerned should be known to be imperilled, it might be suitable that there was an expectation that the issuance of an Alert would make a difference and have a positive outcome. For example, it might be expected to inform policymakers who might not otherwise know the significance of the species' or population's current situation.

There was support for the EA in general, and the Committee developed and endorsed new EA criteria (Annex U) to guide the Committee in identifying and prioritising species and populations from a potentially long list. These criteria provide guidance to assist the Committee when selecting the most appropriate species to take forward as EA proposals via the formal CC-SC process which was endorsed by the Commission at IWC68. It was also **agreed** that these new criteria should be presented at the joint CC-SC meeting later this month.

Rice's whales and Māui dolphins were both proposed as possible candidates, but consensus was not reached on whether these are the highest priorities or whether the EA approach would achieve a useful impact. The Committee **agrees** to establish an ICG to collate and rank potential candidate species for future EAs (see Annex W).

20. IWC LIST OF RECOGNISED SPECIES

The Committee notes there are no proposals to amend the list of recognised species. It agrees to keep this item on the agenda and reiterates the need to ensure the IWC list is synchronised with the one from the Society for Marine Mammalogy's Taxonomy Committee and the IUCN Cetacean Specialist Group.

21. IWC DATABASES AND CATALOGUES

21.1 Guidelines for IWC catalogues and photo-ID databases

The IWC Guidelines for Photo-ID Catalogues were prepared in support of the Committee's work in conducting population assessments utilising photo-ID databases. The aim is that catalogues adhere to common standards for photograph subject and quality, data submission and reporting, at a level sufficient to allow the Committee to meet its population assessment goals. Photo-ID is an evolving methodology and a revision of the original Guidelines (IWC, 2018a, Annex S) became necessary. Pertinent updates were made to the Guidelines (SC/69B/PH/01) and a final draft was accepted by the Committee. The revised Guidelines will be made available on the IWC website.

21.2 Progress with existing or proposed new catalogues

21.2.1 Right whale photo catalogues

The Committee welcomed a report on the current status of the development and implementation of an Artificial Intelligence (AI) matching system to compare the huge photo catalogues of southern right whales from South America, South Africa and Australia. A team studying southern right whales in regions around the Southern Hemisphere have devised and are finalising a workplan with AI developers from Happywhale and the Australasian Right Whale Photo-ID Catalogue (ARWPIC), to develop and trial an advanced, fully automated photo-ID system specifically for southern right whales. It is envisioned that data management systems will be standardised among all catalogue holders to facilitate multiple-catalogue comparisons and reconciliations. Additionally, the application of a common modelling framework to all available long-term datasets would enable the assessment of southern right whale population parameters on a consistent hemisphere-wide scale. It was recognised that this work was essential to the ongoing population assessment of southern right whales. Also see Item 8.2.2.

Attention: SC, R
*The Committee **strongly recommends** that the development and trial of a fully automated photo-ID system designed specifically for southern right whales be advanced intersessionally. The Committee invites an update on progress at SC70.*

21.2.2 Happywhale database

Data that have currently been contributed to and housed at Happywhale.com were summarised in SC/69B/PH/04. Humpback whales currently dominate the catalogue (~94% of encounters), whilst the remaining 6% is represented by 75 species/ecotypes of cetaceans worldwide. It was evident from this report and the peer-reviewed literature that this dataset provides an enormous resource that can be used to estimate abundance over regional and ocean-basin wide scales. Cheeseman *et al*. (2024) estimate that humpback whales have been steadily increasing in the North Pacific over a 40-year period with a current abundance estimate of 26,662 (CV = 0.16), providing one example of many possible applications that such a wide and continuously updated collaborative photo-ID catalogue can provide. The Committee **recognises** that AI developments have revolutionised photo-ID as a research tool.

21.2.3 Flukebook

Flukebook is a non-profit, open-source cetacean data-management and photo-ID tool (developed under the larger Wildbook platform) that uses computer vision and machine learning to facilitate rapid identification of individual animals. In 2023, Flukebook received significant upgrades in its machine learning pipeline, increasing throughput, speed and AI accuracy for individual ID. It leveraged individual data from 23 species to create a single new AI model called 'MiewID' with improved or comparable ID accuracy for all species and speeding inference to reach a new peak throughput potential of 2,778 ID jobs in a single day. These improvements in AI for cetacean photo-ID have culminated in the deployment of new AI models to Flukebook.org with improved or added support for 34 species now available. More details can be found in SC/69B/PH/07 and Annex S.

The Committee **emphasises** how important the Happywhale and Flukebook platforms have been for the work of the Committee on population assessments.

21.2.4 Southern Hemisphere Blue Whale Catalogue

The Southern Hemisphere Blue Whale Catalogue (SHBWC) holds photo-IDs from 2,697 blue whales from waters off Antarctica, Chile, Peru, Ecuador-Galapagos, in the Eastern Tropical Pacific (ETP), off southeastern Australia, Western Australia, Timór-Leste, New Zealand, Southern Africa, Madagascar, Indonesia and Sri Lanka. It is the result of the collaboration of over 30 research groups and individuals. SC/69B/SH/01 presents a progress report of the Catalogue from April 2023 to February 2024.

The matching of Chilean datasets from northern (2006-19) and southern Chile (2003-18) has been completed. These data are used in abundance estimate models reported in SC/69B/SH/16. The comparisons of new Australian regional photo catalogues have been completed. No comparisons have been made yet with new data from Timór-Leste. Given the potential linkage between whales that travel through the waters of Timór-Leste, matching photos between these areas will

increase the understanding of the population structure and movement patterns of the Australian population and may have implications for assessment purposes. New photographs from the Eastern Tropical Pacific/Galapagos and Sri-Lanka are still to be compared. Following the information on population structure and taxonomy presented in Attard *et al*. (2024), a comparison of photographs between regions in the eastern Pacific may further elucidate movement patterns and residency of blue whales in those regions. Also see Items 8.2.1 and 10.1.2.

Attention: SC, R
*The Committee **recommends** that blue whale identification photographs from Timor Leste be considered higher priority for matching with Australia in the Southern Hemisphere Blue Whale Catalogue. The Committee also **recommends** that photographic matching be conducted between regions in the eastern tropical Pacific.*

21.2.5 Antarctic Blue Whale Catalogue

SC/69B/PH/02Rev1 provides new information on the Antarctic Blue Whale Catalogue (ABWC) from 2022-24. Between 2021 and 2024, 29 new individual Antarctic blue whales were identified and compared to the existing catalogue of 552 individuals. There were no re-captures, bringing the total number of identified whales up to 581 individuals (434 left and 426 right sides). This represents between 19-25% of the total circumpolar population, based on the most recently accepted abundance estimate (2,280 whales, CV = 0.36; Branch, 2007). All 29 of the recent identification photos were collected opportunistically and add valuable data to IWC Management Areas I, II and VI, which are underrepresented in the Catalogue. The ABWC has benefitted from the contribution of opportunistically collected photographs by citizen scientists. Currently 15% (88/581) of the identified whales in the ABWC come from opportunistic photographs. The data from the catalogue have been used in peer-reviewed studies on movement and to estimate abundance. The data have also been used in numerous Committee papers for pre-assessment purposes.

Attention: SC, R
*The Committee **encourages** continued contributions of opportunistically collected photographs for the Antarctic Blue Whale Catalogue, noting the value these data provide to population assessments.*

21.2.6 Fin whale photo catalogues

The authors of SC/69B/PH/08 propose an AI deep learning-based framework for identifying Southern Hemisphere fin whale individuals using aerial drone footage of dorsal pigmentation patterns. By focusing on the central chevron pattern and blaze, the objective is to develop a novel aerial photo-ID approach by leveraging a semi-supervised workflow and thereby reducing manual labelling efforts. For technical details, see Annex S, item 3.6. The authors explained that the framework was still in the early stages of development. When it is completed, they intend to make the software open access. The Committee invites future updates on this work. It was acknowledged that these data and the results of the project will be especially valuable for the population(s) of Antarctic fin whales as the Committee progresses towards the pre-assessment phase.

21.2.7 Humpback whale photo catalogues

The latest results from the North Atlantic Humpback whale catalogue (NAHWC) were presented in SC/69B/PH/03. The NAHWC currently includes photographs and data from 50,000 sightings of 11,690 individual non-calf humpback whales identified by ventral fluke photos. The report highlighted the collaborative efforts of over 850 contributors across the North Atlantic Ocean basin and detailed the current methods used for photo-ID and cataloguing. Notably, advancements in digital photo-ID analysis techniques have enhanced the cataloguing process, incorporating AI algorithms through Happywhale while maintaining stringent comparison standards.

In discussion, it was explained that high quality fluke images taken of deceased humpback whales are useful because these individuals can subsequently be removed from the catalogue and any further matching efforts.

Attention: SC, R
*The Committee **draws attention** to the extremely high value of large photo-ID datasets such as the North Atlantic Humpback Whale Catalogue (NAHWC) in understanding whale movements, population connectivity and abundance.*

*The Committee **encourages** collaborators/researchers to contribute photographs of deceased humpback whale tail flukes to the NAHWC and, where possible, to collate additional photographs from stranding networks that may not yet have contributed their data (e.g., the United Kingdom, Azores).*

The IndoCet Consortium has uploaded and matched regional Southwest Indian Ocean humpback whale photo-ID data on the Happywhale platform as described in SC/69B/SAN/03Rev2. This effort is being conducted under a collaborative strategy to improve estimates of abundance and interchange among sub-stocks of Breeding Stock (BS) C and to improve

current understanding of linkages to other IWC Southern Hemisphere breeding regions. The number of ID photographs from BS-B and C has grown from 73 individuals in 2018 to 8,172 individuals as of March 2024. For BS-C, this comprises a total of 4,503 individuals, with data from South Africa, Mozambique, Kenya, Tanzania, Comoros/Mayotte, Madagascar and Reunion. Additional data from Madagascar are still to be uploaded. Data for BS-B comprise a total of 3,669 individuals, with contributions from western South Africa, Namibia, Angola, Equatorial Guinea and Gabon. A total of 57 matches were found among sub-stocks of BS-C and further matches were discovered between BS-C and other Breeding Stocks, including BS-A, BS-B and BS-D. Also see Item 5.1.

Attention: SC, R
*The Committee **encourages** the continuation of the successful, highly collaborative work of the Indocet Consortium in collecting and providing photographic data on humpback whales from the Southwest Indian Ocean.*

21.2.8 Other photo-ID catalogues
The topic of cross-platform identification was discussed several times in the Committee. The Committee raised concerns that research groups that move solely to drone footage will make comparisons with the existing lateral aspect catalogues difficult. The Committee was provided with a brief presentation on recent cross-platform (lateral and vertical aspects) matching of beluga photos from Cook Inlet using an AI algorithm developed in conjunction with Flukebook. The Committee **looks forward** to updates on this system at SC70.

21.3 Progress with existing IWC databases
The Working Group on IWC Global Databases and Related issues (GDR) assesses the utility and support requirements of all IWC databases that are relevant to the Committee's work. It collects information on these databases, summarises data use, and provides recommendations to improve integration, content and workflows. It also reviews existing or planned databases to ensure they are properly resourced and prioritised. See Annex I for more details.

21.3.1 Summary of IWC databases and current priorities
The Committee was reminded that all future Committee-related databases and web applications hosted by the Secretariat will be based on paid, fully managed cloud-hosting plans and that any existing or proposed databases have ongoing costs, so it is important to review and prioritise new, existing and proposed databases and identify those which are no longer needed.

The full list of Committee-related databases that are in use, in development or being planned are listed in Annex I, appendix 1. The Working Group reviewed and updated the current list of databases developed to support the Committee's work. The Working Group also identified the databases that should be prioritised for development or maintenance in the intersessional period up to SC70 (Annex I, table 1).

21.3.2 IWC National Progress Reports
The Committee recognises the low number of National Progress Reports (NPRs) submitted to SC69B. In discussion, the Committee acknowledges the utility of the current National Progress Reports for some countries, but that other countries would prefer to provide data in other formats. It also notes that some data provided to the IWC were not captured in NPRs, such as catch data.

The Committee agrees to consider NPRs as part of the ICG proposed under Item 21.4.2. It also agrees that greater flexibility around data submission and reporting processes with better interconnectivity between IWC databases will better capture and improve the utility of all national data submissions.

21.3.3 Review database procedures, evaluate integration and consolidation of existing databases and define rules for accessing data
Discussion of this agenda item is presented under Item 21.4.2.

21.4 Potential future IWC databases
21.4.1 IWC database proposal pro forma
The Committee was reminded of the IWC database request proforma (IWC, 2023a, Annex N) and the value of developing an online form for improved tracking of requests.

Attention: S
*The Committee **recommends** that the Secretariat explores transforming the database request proforma into an online form for SC70.*

21.4.2 New proposals for IWC databases
The Committee reviewed two proposals for the development and support of new IWC databases (see Annex I, appendix 2).

Table 6
Proposals for new IWC databases.

Title	Development costs	Hosting costs	Coordination and data entry costs
Cetacean Marine Debris Interactions Database	£25,000	£200/month	£5,000 per year
Global Cetacean Strandings Database	£23,000	£100/month	£10,000 per year

While the WG considered the costings for development, hosting and maintenance in the two proposals to be reasonable, it recognised the ever-increasing overall costs to the Secretariat and Research Funds to host, maintain and update Committee-related IWC databases. It questioned whether the two databases needed to be 'stand-alone' or if savings could be made by constructing a single database and interface that could address the stated objectives. The Working Group also suggested there may be efficiencies and advantages in increasing the interconnectivity with current IWC data holdings, such as the ship-strike, catch and progress report databases.

A third proforma was received after the Working Group met relating to data and webpages on cetaceans and pollution already hosted by St. Andrews University: Pollution Information for Cetaceans Database[10] and IWC Contaminant Explorer[11] (see Annex I, appendix 1, table 3). The hope is for these databases to be brought under the management of the Secretariat. Discussions suggested these should also be considered under the need to increase interconnectivity with other data holdings.

Several WG members who manage regional and national strandings databases offered to share their experience to assist with the development and integration of existing and proposed databases.

Attention: C, S
The Committee has developed several databases to support and inform its work and that of the Commission. In many cases, the Committee's Research Fund has been used to develop and populate these databases but the annual costs for hosting these are primarily covered by Secretariat funds. Given the budget issues facing the IWC, the Committee is concerned about the ability of the IWC to continue to host and maintain these databases in the long term.

*The Committee **recommends** that adequate funding be provided to the Secretariat for long-term hosting and maintenance of the various databases of the Committee.*

Attention: SC, S
*The Committee **recommends** a review of all Committee-related data holdings and a strategy to allow greater interconnectivity between databases to help reduce maintenance and hosting costs.*

The Committee received an update from SC/69B/REP/05 on the Southern Right Whale (SRW) Catch Series Workshop, which proposes the establishment of an ICG to proceed with the work on revisions of the catch data series. It was noted that the ICG will work on creating a catch histories database to be used for assessment of Southern right whales.

Attention: SC, S
*The Committee **recommends** the Southern Right Whale Catch Series ICG develop a scheme as similar as possible to the existing IWC catch scheme and consult with the Secretariat and GDR Working Group during the development process.*

21.5 Workplan

Workplans can be found in Annex I and S. ICGs are presented in Annex W.

22. MULTINATIONAL RESEARCH PROGRAMMES AND NATIONAL SURVEYS

Due to reduced meeting time and budget, the Committee developed a new process in which it would no longer review, discuss, or endorse most survey plans and reports. Instead, comment sheets were available online for members of the Committee to provide feedback. Only a brief author summary, any online comments, deemed important by the Committee, and a relevant conclusion welcoming (but not endorsing) the information will be reported. Two exceptions are: (1) cases where specific technical guidance or feedback on the survey plan or analysis is sought; and (2) IWC-sponsored programmes such as IWC-SORP and IWC-POWER. Such exceptions will be presented and discussed as in previous years.

[10] https://www.smru.st-andrews.ac.uk/IWC_PCB_Cet_Pop_Model/
[11] https://www.smru.st-andrews.ac.uk/IWC_Contaminant_Explorer/

22.1 Surveys that include IWC funding and/or support (IWC-POWER)

The Committee welcomed the results of the 14th annual IWC-POWER cruise (SC/69B/ASI/05) conducted in 2023 in the eastern North Pacific. The cruise was organised as a joint project between the IWC and Japan. The main objectives of the cruise included obtaining information: (1) for the IAs of sei, humpback, gray and sperm whales in terms of abundance, distribution and stock structure; (2) on the critically endangered North Pacific right whale population in the Pacific; and (3) on distribution, stock structure and abundance for a poorly known area for several large whale species/populations, including those that were known to have been depleted in the past but whose recent status is unclear (e.g., blue and fin whales). For detailed information about the survey, see Annex D, item 7.1.

The Committee received the report of the IWC-POWER Steering Group (SC/69B/REP/01A) on the detailed planning for the 2024 IWC-POWER cruise and the preliminary plans for the 2025 survey. In addition to the line transect survey with acoustic stations, priority will be given to photo-ID and biopsy sampling of target species (gray, humpback and fin) whales.

The IWC-POWER Technical Advisory Group (TAG) presented the report of a workshop for planning for Phase II of the IWC-POWER programme (SC/69B/REP/01B). The report provides a comprehensive collation of the results of the cruises since the programme started in 2010. The first phase of the will be completed in 2026 and the TAG will present a proposal for Phase II at SC70. A summary of this workshop, including priorities and a workplan, is provided in Annex D, appendix 5.

The Committee highlights the importance of the IWC-POWER programme which has provided valuable information on cetaceans for over a decade, noting the international effort as one of its the key strengths. The sightings data, biopsy samples, photo-ID photographs, and the information from the drifting buoy recorders, feed directly into the work of the Committee and support the advice provided to the Commission. Some analyses from these surveys have been delayed, however, the Committee was pleased to hear that remaining abundance estimates will be presented at the forthcoming POWER TAG meeting later this year. The Committee looks forward to receiving this information for review and potential endorsement at SC70 in 2026.

It was noted that a budget request for IWC-POWER was not submitted for this biennium because the Secretariat considers that there are sufficient funds to cover the research plans for the next two years.

The IWC-POWER programme could not operate without the generous financial and logistical support of the Japanese Government who provide the vessel, crew and some of the scientists. Without this support, our understanding of cetacean populations in the North Pacific would be severely limited. The Committee thanks the TAG members, the scientists from numerous countries and the Government of Japan for making this programme such a success.

Attention: C

*The Committee **reiterates** the great value of the data contributed by the IWC-POWER cruises which have covered many regions of the North Pacific Ocean not otherwise surveyed in recent years. The programme addresses important information gaps for several species and contributes to ongoing Committee assessment work. The Committee **endorses** the report of the Steering Group (SC/69B/REP/01A and SC/69B/REP/01B) and **recommends** the programme continues.*

*With respect to Phase II, the Subcommittee **endorses** the report of the Technical Advisory Group (SC/69B/REP/01B), including the updated priorities for Phase II and the Workplan to complete the major analyses of data (especially abundance estimates) for Phase I at the next TAG workshop, for endorsement at SC70. Given the importance of abundance estimates to the Committee's work, the Committee highlights the TAG recommendation that it develops procedures during its 2025 meeting (with cost estimates if necessary) to ensure smooth and timely data validation, storage and analyses.*

Furthermore, the Committee encourages all Member Governments and Range States to support IWC-POWER either financially or in-kind to further enhance the value of the cruise.

22.2 Surveys that seek IWC funding and/or request IWC oversight (IWC-SORP)

The Southern Ocean Research Partnership (IWC-SORP) was established in March 2009 as a multi-lateral, non-lethal scientific research programme with the aim of improving the coordinated and cooperative delivery of science to the IWC. The Partnership currently has 13 member countries: Argentina, Australia, Belgium, Brazil, Chile, France, Germany, Italy, Luxembourg, New Zealand, Norway, South Africa and the USA. New members are warmly welcomed. The IWC-SORP ethos is one of open collaboration, communication and data sharing.

There are seven ongoing IWC-SORP themes:

(1) The Antarctic Blue Whale Project;
(2) Distribution, relative abundance, migration patterns and foraging ecology of three ecotypes of killer whales in the Southern Ocean;
(3) Foraging ecology and predator-prey interactions between baleen whales and krill;
(4) Distribution and extent of mixing of Southern Hemisphere humpback whale populations around Antarctica, focused initially on east Australia and Oceania;
(5) Acoustic trends in abundance, distribution and seasonal presence of Antarctic blue whales and fin whales in the Southern Ocean;

(6) The right sentinel for climate change: linking foraging ground variability to population recovery in the southern right whale; and
(7) Recovery status and ecology of Southern Hemisphere fin whales.

The IWC-SORP Annual Report 2023-24 describes the continued progress of research undertaken by researchers involved in the seven themes since the 2022-23 reporting period (SC/69B/SH/05). This includes the production of >20 peer-reviewed publications during 2023-24, bringing the total number published since the start of the initiative to 311. Since 2009, more than 235 IWC-SORP-related papers have been submitted to the Committee for consideration - 17 this year. The initiative has supported 21 PhD, 17 Masters and 17 Honours theses, plus the work of at least five postdoctoral fellows.

Research under IWC-SORP auspices has contributed to the work of multiple subcommittees and WGs, informed the successful third Decadal Review of the Southern Ocean Sanctuary (SOS) (Annex N, item 4), and contributed to the development and implementation of photo-ID, genetic catalogues and new technologies and methodologies to facilitate research.

Expeditions were conducted around the Antarctic Peninsula (SC/69B/SH/17), the waters off the Australian Research Stations Mawson and Davis, the sub-Antarctic Marion Island and Prince Edward Island, the Saint Paul and Amsterdam Islands, in the waters off South Africa, eastern and western Australia, New Zealand, Chile and around Península Valdés, Argentina. Southern right whale aerial surveys occurred in South Africa, Australia and Brazil. Hundreds of images for photo-ID were collected; satellite tags deployed on killer, southern right, fin and blue whales; biopsy samples collected from killer, humpback, southern right, fin, Antarctic minke and humpback whales; long-term acoustic moorings were deployed, and hundreds of hours of cetacean acoustic recordings were collected and analysed.

A report was received on the progress of six ongoing research projects supported by the IWC-SORP Research Fund following three previous grants rounds (2016-present), and on two projects that received discretionary funding intersessionally (SC/69B/SH/06). Voluntary contributions to the IWC-SORP Research Fund recently made by the Governments of Australia and Belgium, and Emma Abel, in addition to previous contributions from Australia, France and The Netherlands, the International Fund for Animal Welfare and WWF-Australia, were gratefully acknowledged.

Following contributions and expenditures, a total of £128,240 GBP remains unassigned in the IWC-SORP Research Fund (SC/69B/O/09). A fourth Call for Proposals opened on 12 January 2024 and closed on 29 February 2024. Thirteen proposals were received and deemed eligible for assessment. The Assessment Panel included 16 members of the Committee and was chaired by the Chair of the Committee, with support from the IWC-SORP Secretariat. A suggested allocation of funds to successful projects was proposed by both the IWC Assessment Panel and IWC-SORP Scientific Steering Committee (SSC) and was subsequently **agreed** by the Committee. This funding proposal will be presented to the Commission for endorsement at IWC69.

The Committee **thanks** all those involved in the consortium for their efforts and **recognises** the substantial contribution that IWC-SORP makes to the work of the Committee. The Committee **commends** Bell for her work in the role of IWC-SORP Secretariat, and **thanks** the IWC Secretariat for administrating the IWC-SORP Research Fund, particularly Pinder, Bartmeier and Jones.

Recognising that IWC-SORP is cross-cutting, highly collaborative, builds capacity, contributes to methodological and technological advancements, and has continued to be extraordinarily productive, the Committee **strongly encourages** that the Partnership be continued.

Attention: SC, R, G
*The Committee **reiterates** the great value of the IWC'S Southern Ocean Research Partnership (IWC-SORP) initiative, **commends** their work and welcomes updates at SC70. The Committee **reiterates** that it:*

(1) ***Strongly encourages** continuation of the Southern Ocean Research Partnership;*
(2) *Encourages:*
   (a) *The continued collation of information relevant to upcoming population and/or stock assessments for priority Southern Ocean whale species, in particular Antarctic and non-Antarctic blue whales, fin whales and southern right whales;*
   (b) *Research that enhances understanding of krill consumption rates, spatial distribution of cetaceans and their krill swarm-preferences, and/or baleen whale interactions with krill fishing operations;*
   (c) *The continued development of collaborations that allow for research and/or data sharing, inter alia, photo-ID data, to IWC-SORP and the Committee; and*
   (d) *The continued collaborative development of technologies and methodologies that advance the abovementioned priorities.*

22.3 Surveys that seek advice from the Committee regarding survey or analysis methods

SC/69B/ASI/10Rev1[12] describes plans for a Korean cetacean sighting survey in 2025 that will use vessels and an aircraft. Specific advice was requested on the design and implementation of the aerial survey regarding: (1) the need for a bubble window in the aircraft; (2) whether the speed and altitude of the aircraft are appropriate for both large whales and dolphins; and (3) analysis of the observer and camera data. The Committee congratulates the authors for their plans to survey such an extensive area and provided advice in Annex D, item 7.2. The Committee also emphasised the value of testing survey methods (e.g., observer protocols and integration with the aerial photographic data) in advance of conducting the survey, and of dedicating sufficient resources and expert time to the statistical analysis, which is anticipated to be challenging.

22.4 Other survey reports and plans

Information from three additional survey plans in the North Pacific, Antarctic Area IV-East, and Sea of Okhostk were received by the Committee, as was information from six reports from surveys in the North Sea, Area IV-West and Davis Sea, Barents Sea, Sea of Okhotsk, North Pacific and the Yellow Sea. Annex D, item 7.2 provides further detail. The Committee welcomes this information and congratulates the researchers who completed the successful surveys.

23. SCIENTIFIC COMMITTEE BUDGET

Historically, the Committee research fund allocations were developed based on indicative budgets provided by the Commission. For 2025 onwards, the Committee is required to develop its biennial budget without prior knowledge of available funds, i.e., develop a 'zero-based budget'. The budget must include the cost of hosting meetings (e.g., workshops), as well as its required modelling work, database development, research projects and reports.

The Committee recognises the challenging budget situation within the Commission. As a result, the Commission has developed new budgeting procedures. One aspect of the new process appears to be a restriction on carrying over unspent funds from one biennium to the subsequent one. There are concerns about how this restriction may negatively impact the work of the Committee. For example, planned projects may be disrupted or downsized due to logistics, weather, scheduling, or other issues. Therefore, the Committee **requests** that the Commission allow the Committee to carryover unspent funds from one biennium to the next. If projects are not completed within two biennia (i.e., 4 years), the Committee will cancel the project, unless there are exceptional circumstances, and return the funds to the Commission for allocation to other purposes.

In 2022, Commissioners provided some guidance on how to prioritise future work of SC and indicated priority should be given to proposals related to 'ASW-related topics' (IWC, 2022b). Using this guidance, the Committee established a procedure to prioritise funding proposals (see SC/69B/O/10).

This year, when assessing proposals, subgroups followed the new procedure outlined in SC/69B/O/10. Subsequently, the Convenors strictly ranked all projects in order of priority to the Committee's work and Commission priorities.

23.1 Report from the Budgetary Steering Group

The SC Budgetary Advisory Group (SC-BAG), which includes members of the Committee, was formed in the 2022 Committee meeting to address the need to reduce Committee costs considering the Commission's budget deficit. The SC-BAG did not meet at SC69B but will continue to work intersessionally.

23.2 Status of funded research, workshop proposals, data processing and computing needs

SC/69B/O/09 provides information regarding the position of the Committee's Research Fund at the end of the 2023 financial year. The remaining balance of the contingency fund on 31st March 2024 was £24,287, which represents 11% of the 2024 research budget. A contingency level of 10% is permitted, as set out in the Financial Regulations.

23.3 Fund reallocations and contingencies for the Research Fund, Voluntary Fund for Small Cetaceans & IWC-SORP Voluntary Fund

Contributions to the IWC-SC Research Fund, Small Cetacean Voluntary Fund (SCVF) and IWC-SORP Fund are welcomed. These funds contribute to the research programme of the Committee and, if not used, are reallocated to provide support to other research projects or to support core work. Several Research Fund reallocations were made at this meeting (Table 7).

23.3.1 Small Cetaceans Voluntary Fund

The Committee was updated on the status of the Small Cetacean Voluntary Fund (SCVF) and the progress of previously funded projects. Since January 2023 voluntary contributions totalling £70,187 have been gratefully received from the Governments of Australia, France and The Netherlands and the Animal Welfare Institute.

From 1 April 2024, the SCVF stands at £163,155, of which £150,849 is not yet allocated to projects.

[12]The Committee notes that SC/69B/ASI/10/Rev1 does not represent an official position of the IWC on the legal nature and designation of the waters to be surveyed.

Table 7
Projects for which funds were identified for reallocation.

Project title	Reallocation amount (£)	Notes
Development of Permanent Blue Whales Reference Library SC/66B/RP/08	(4,000)	Project cancelled
Ecosystem Functioning Workshop SC/67B/RP/08	(1,926)	Underspend
Implementation Review NP Minke Whales SC/68B/RP/28	(1,341)	Underspend
TOTAL	**(7,267)**	

Following a call for new small cetacean research and conservation proposals earlier this year, seven projects totalling some £120,000 were recommended for approval (see Item 16.7).

23.3.2 Southern Ocean Research Partnership Fund

The Committee was updated on the progress of projects funded through the IWC-Southern Ocean Research Partnership (IWC-SORP).

Since SC69A, a voluntary contribution to the IWC-SORP Fund has been gratefully received from the Government of Australia (£69,188).

From 1 April 2024, the IWC-SORP Fund stands at £216,532. Of this amount, £88,292 is already allocated to projects endorsed by Commission following previous grant rounds but is, as yet, unspent (see in SC/69B/SH06 for progress reports), and £128,240 is not yet allocated, therefore, is available for new projects, noting that the IWC-SORP SSC can allocate discretionary funding of up to £15,000 per budget period without the endorsement of Commission, to ensure the smooth running of approved programmes (IWC, 2017a, Annex W).

Following a call for new IWC-SORP proposals earlier this year, 13 new project proposals were received and reviewed by an Assessment Panel comprising 16 members of the Scientific Committee. During SC69B, the IWC-SORP Scientific Steering Committee (SSC) and the Scientific Committee reviewed the outcome of the Assessment Panel's deliberations and proposed a list of seven projects that should be funded, to a total of £120,028. This proposed allocation will be presented to the F&A Committee during IWC69 for endorsement. See Item 22.1 for further information on IWC-SORP.

23.3.3 Research fund

Since SC69A, a number of Voluntary Contributions have been received into the SC Research Fund. Contributions towards IPs were received from the Governments of The Netherlands (EUR 8,000) and Spain (EUR 15,000). Contributions were also received from the Governments of Belgium (EUR 10,000) and France (EUR 24,000), towards holding SC69A. Finally, USD 10,000 was received from the Animal Welfare Institute, towards the recent workshop on the role of cetaceans in ecosystem functioning (see Item 15.1). The Committee is grateful for all these contributions, which have greatly assisted the Committee in its work.

23.4 Proposed budget for 2025/26 developed under the Committee's guidelines

Using the process outlined in SC/69B/O/10, the Committee proposed a biennial research programme for 2025-26, listed in order of priority as per its mandate from the Commission. A rigorous process of scoring and ranking was applied to ensure fair evaluation of each proposal. The project considered the most important to the Committee's work is ranked as 1, with other projects, including modelling, workshops, databasing and research, listed in descending order of importance from 2 to 23 (Table 8).

The Commission tasked the Secretariat, in coordination with the Committee, to submit a costed plan for all aspects of the Plastics Resolution. The Secretariat and SC leadership worked intersessionally with the E Subcommittee (via the Marine Debris ICG) and other parties who work directly on the impacts of plastics on marine megafauna, to develop a response to this request. It was agreed that a small group would review the draft costed plan prior to its submission to the Finance and Administration Committee at IWC69.

The Committee draws attention to the large amount of matching funds and in-kind support that Committee members, Invited Participants (IPs) and others contribute to the priority work of the IWC. Most of the projects proposed for 2025-26, involve substantial co-funding. In 2018, the SC Leadership estimated matched contributions to be approximately £600,000 per annum. Those contributions are from contracting governments, NGOs, non-member governments, individuals and others, and include travel, salary, computing and field work support and provision.

Table 8

Projects considered the most important to the Committee's work, ranked from 1 to 23. This includes modelling, workshops, databasing and research.

RP number	Project Title	Type of Project	Relevant subgroups	2025 £	2026 £	Sub-Total	Co-funding £	**TOTAL £**	Ranking (high-low)
	Invited Participants (IPs)	Meeting	ALL		100,000	100,000		**100,000**	1
5	2025 joint intersessional workshop for ASG, IST and IA	Meeting	ASI* ASG, IST, IA	47,400		47,400	37,260	**84,660**	2
24	Securing legacy in computing and modelling	Modelling	ALL	8,475	10,975	19,450		**19,450**	3
23	2026 intersessional workshop on the assessment of North Atlantic humpback whales	Workshop	IA*, NH, ASW		20,280	20,280	12,500	**32,780**	4
19	Essential computing support to the Secretariat for IA and IST for assessment of several species	Database	IA*, IST, ASW	17,000	24,260	41,260		**41,260**	5
6	2026 pre-meeting of the Abundance Steering Group (ASG)	Meeting	ASI*, ASW, CMP, EM, IST, IA, NH, SH, SM		12,962	12,962		**12,962**	6
20	SOCER	Reports	E*, ALL		4,000	4,000		**4,000**	7
1	Scientific Committee Communications Initiative	Reports	ALL		7,750	7,750		**7,750**	8
16	Small meeting to further the In-depth assessment of WNP minke whales and progress development of assessment and management procedure software	Modelling	IA*, IST, ASW	14,500		14,500	12,960	**27,460**	9
12	Southern Hemisphere Blue Whale Catalogue 2025-26	Database	SH*, GDR, E, ASI	24,410	15,070	39,480		**39,480**	10
22	Intersessional workshop on CMPs of cetacean species that occur in Latin America	Workshop	CMP*, IA, HIM, WW, NH, E, ASI, SDDNA.	32,550		32,550	15,500	**48,050**	11
21	Fourth workshop on Central American Humpback Whale (CAHW) threats and mitigation measures	Workshop	CMP*, IA, SH, HIM, SM, WW, NH, E, ASI, SDDNA.	12,205		12,205	2,825	**15,030**	12
13	Development and use of the IWC Ship Strikes Database	Database	HIM*	10,000	10,000	20,000	60,000	**80,000**	13
18	IWC Strandings Expert Panel intersessional workshop	Workshop	E*, HIM	15,450		15,450	6,000	**21,450**	14
15	Concrete steps towards an Arabian Sea humpback whale Conservation Management Plan	Workshop	CMP*	7,800		7,800	8,040	**15,840**	15
8	Continuation of mark recapture analysis of Southern Hemisphere blue whale photo-ID datasets to estimate regional abundance	Research	SH*	16,500	5,500	22,000	29,600	**51,600**	16
10	Development of updated and detailed catch data series for southern right whales	Research	SH*, IA, ASI, CMP	12,600		12,600	15,000	**27,600**	17
9	Assessment of the impact of reproductive failure on whale dispersal between Argentina and Brazil: reproductive failure trend over time and their relationship with climate change	Modelling	SH*, CMP, ASI, E, PH	9,720	1,080	10,800	4,420	**15,220**	18
2	Space-time models for whale surveys with complex designs	Meeting	ASI*, IA, IST, SH, NH, EM, HIM	20,000		20,000	15,000	**35,000**	19
14	Passive acoustic monitoring for blue whales off the coast of Kenya	Research	SH*	12,516	8,597	21,113	31,464	**52,577**	20
11	Passive acoustic monitoring of the Eastern South Pacific Southern right whale CMP 2025/26	Research	CMP*, SH, SM	9,990	3,000	12,990	10,500	**23,490**	21
7	Assessments of blue whale populations: Antarctic, eastern North Pacific, and central/western North Pacific	Modelling	IA*, NP	17,564	18,091	35,655		**35,655**	22
4	Annotated library of offshore southern right whale sounds for testing and training automated detectors	Database	SH*	20,000		20,000		**20,000**	23
	Grand Total £			**308,680**	**241,565**	**550,245**	**261,069**	811,314	

Rank 1: Invited Participants

IPs are a vital component of the Committee and contribute in many ways, including as Subcommittee and Working Group Convenors and Co-Convenors, as well as rapporteurs, subject area experts and key participants of intersessional workplans. The work of the Commission benefits significantly from IP expertise and participation across all aspects of the Committee's work.

Rank 2: 2025 Joint Intersessional workshop for ASG, IST and IA (SC/69B/RP/05)
This workshop addresses critical objectives of the SC and Commission, especially related to aboriginal subsistence whaling. Without the workshop, abundances estimates will not be endorsed for use in SLAs, forward progress will be more limited than desired on CMPs and other conservation and management efforts, the eastern North Pacific gray whale Implementation Review to confirm safe subsistence whaling limits and an in-depth assessment of North Pacific minke whales will not be initiated, stalling investigation of recent conservation concerns. Due to the technical nature of the work, computing requirements, and other factors, it is impossible to conduct these activities virtually. The proposal saves £62,000 compared to separate workshops (due to overlapping participant lists) with £37,000 additional savings due to in-kind support from the USA and Contracting Government contributions to sponsor those who were national delegates to SC69B. The delays in the provision of priority advice to the Commission without intersessional activity has been highlighted in several SC recommendations such as #SC23118, #SC2306, #SC2307.

Rank 3: Secure legacy in computing and modelling (SC/69B/RP/24)
Developing a plan to ensure the continuity of expertise and knowledge within the SC is critical to maintaining the IWC's core work of assessing the status of whale stocks and providing advice through its management procedures. A steering committee made up of experienced SC members will identify and recruit individuals with the requisite skills to participate in the critical modelling and assessment work. These individuals will be trained and mentored during IWC assessment workshops (e.g. SC/69B/RP/05) helping to produce comprehensive and accessible documentation of the processes used. This will provide a template for increasing the specialist skills and expertise within the SC membership and avoid the over reliance on a few key individuals

Rank 4: 2026 Intersessional workshop on the assessment of North Atlantic humpback whales (SC/69B/RP/23)
The Committee has agreed that an In-depth Assessment of North Atlantic humpback whales is needed urgently to inform the Implementation Review of the Greenland hunt. In addition, the assessment results will inform the development of an SLA for the St. Vincent and The Grenadines hunt, for completeness, although formally an SLA is not needed to provide management. The proposed workshop will: (1) build upon the 2024 workshop being held by NH to prepare for an in-depth assessment; (2) start the In-depth Assessment for North Atlantic humpback whales, recognising the needs of IST with respect to SLAs; and (3) develop a workplan for completion of the assessment. Without this intersessional workshop to start the assessment of North Atlantic humpback whales, the required steps to provide management advice on Greenland hunts will be disrupted.

Rank 5: Essential computing support for assessment of several species (SC/69B/RP/19)
The Committee is currently engaged in an In-depth Assessment of Western North Pacific minke whales. An In-depth Assessment of North Atlantic humpback whales will commence intersessionally to provide results to the IA and IST/ASW Subcommittees, including ASW management advice. A core component of these two processes is the development, validation and implementation of models and their associated sensitivity tests. Experience has shown that Secretariat staff cannot handle this process alone, so computing support is needed, especially given the recent retirement of an experienced Secretariat staff member in this area. In addition, support will be provided to the Secretariat as required, related to other In-depth Assessments, Implementation Reviews and database tasks for the IA and IST/ASW Subcommittees.

Rank 6: Annual meeting of the Abundance Steering Group (ASG) (SC/69B/RP/06)
This pre-meeting is critical because approved abundance estimates are required for most quantitative work of the Committee and are specifically a programmatic requirement for the provision of ASW management advice. Recognising this, the Committee has previously recommended that an ASG pre-meeting be established as a normal component of annual Committee meetings (IWC, 2019a, item 12.2.1). A shift to a biennial meeting, provision for annual ASG meetings must be made to meet the demand for endorsing abundances estimates for use in SLAs, CMPs, and other conservation and management efforts, in a timely manner. A move to biennial meetings of the ASG will result in a nearly insurmountable backlog of abundance reviews to complete. In-person meetings are essential due to the complexity of the subject matter and the nature of the interactivity: running re-analyses and sensitivity tests, and small-group investigations. The delays in the provision of priority advice to the Commission without intersessional activity has been highlighted in several SC recommendations, i.e., SC23118.

Rank 7: Production of annual State of the Cetacean Environment Report (SOCER) (SC/69B/RP/20)
The SOCER is appended to Committee reports and is also available on the IWC website as standalone documents. The SOCER is produced in response to several Commission resolutions, including 1997-7 and 1998-5, directing the Committee to provide regular updates on environmental matters that affect cetaceans. Resolution 2000-7 welcomed the concept of SOCER and requested the annual submission of the report. The SOCER summarises key peer-reviewed papers and published articles, from five regions, in a 2–3-year cycle. A first five-year compendium has already been produced and a second one is in production for 2025. Compendiums are sent to contracting governments as a circular.

Rank 8: Scientific Committee Communications Initiative (SC/69B/RP/01)
The Communications Initiative proposals were welcomed and endorsed by the Commission at IWC68. This work is underway, and the Communications Initiative Steering Group has worked intersessionally to develop material for the SC summary document, AV presentation to plenary, and plenary science hub, all of which will be launched at IWC69. These funds will be used to further develop the communication tools, including for design, translation and production of outreach materials for use at IWC70, all of which aim to improve the Committee's ability to convey advice, explain its work and demonstrate value for money to the Commission. Also see Item 25.2.

Rank 9: Small meeting to further the In-depth Assessment of WNP minke whales and progress development of assessment and management procedure software (SC/69B/RP/16)
The Committee is engaged in an IA of WNP common minke whales (IA-NPMi) and has recognised the need to develop guides for modellers to apply programmes relating to the AWMP and RMP. This proposal involves bringing together a small group of modelling experts who will assist the Secretariat in furthering the IA-NPMi as well as finalising documentation and drafting guides to assist new members of the team to apply and test existing programmes, including those necessary for application of the RMP and AWMP. Time will be dedicated to code development for the IA-NPMi to finalise conditioning of stock hypothesis E (see 8.1.3) and projections into the future under all hypotheses, validation of the code and running of additional trials and scenarios, including projections under baseline and sensitivity trials. If time allows outputs will be developed for SOW webpages.

Rank 10: Southern Hemisphere Blue Whale Catalogue (SHBWC) 2025-26 (SC/69B/RP/12)
The SHBWC is an international collaborative effort to facilitate cross-regional comparison of Southern Hemisphere blue whale photo-ID catalogues. To date more than 2,500 individual blue whale photo-IDs have been contributed to the SHBWC from researchers and groups working on areas off Antarctica, Chile, Peru, Ecuador-Galapagos, Eastern Tropical Pacific, Australia, Timor Leste, New Zealand, Indonesia, Sri Lanka and Madagascar. The work proposed for 2025-26 will focus on: (1) matching and photo-quality coding newly acquired data from 2016-17 with existing catalogues from southern Chile; (2) matching and photo-quality coding Timor Leste photo-IDs to the Australian sub-catalogue; and (3) matching and photo-quality coding photo-IDs from the Costa Rica Dome and ETP within the same region. This project was considered a high priority by the SH Subcommittee because it will advance the regional population assessment of non-Antarctic blue whales. If this work is not undertaken, ongoing mark-recapture modelling efforts will fail and progress toward the regional assessment of non-Antarctic blue whales will stall for the next biennium (see also the closely related project ranked 15 below).

Rank 11: Intersessional workshop on CMPs of cetacean species that occur in Latin America (SC/69B/RP/22)
The IWC established CMPs to create a structured approach for nations within the habitat range of at- risk cetacean populations to cooperate alongside relevant stakeholders in safeguarding and recovering these populations. CMP actions are dynamic and evolve as new information is available. Therefore, these actions require periodic review and update. This intersessional meeting will advance standing items on the SC agenda related to CMPs of species that occur in Latin American countries with the range of one of these species. This more regional meeting has many advantages, including increasing participation of local governments, including non-governmental local stakeholders, potential synergistic effects across different CMPs and reducing costs of the work of the Committee.

Rank 12: Fourth workshop on Central American Humpback Whale (CAHW) threats and mitigation measures (SC/69B/RP/21)
The first workshop to discuss the development of this CMP, including biological and ecological aspects, threats, mitigation and monitoring, was conducted in Panama in 2020 (see SC/68B/CMP/25Rev1). At the 2022 Committee meeting, it was reiterated that the Central American humpback whale population should be a 'priority population' for CMP development. The Committee endorsed the nomination of the CAHW CMP in 2024 and it is essential for the timely progress of this CMP to hold a workshop in 2025. This will ensure that the CMP remains up to date and effective in its research, management and conservation objectives.

Rank 13: Development and Use of the IWC Ship Strikes Database (SC/69B/RP/13)
This project aims to develop the IWC ship strikes database and ensure comprehensive reporting of ship strike incidents through: (1) systematic outreach to data providers; (2) review and provision of data; (3) promoting access to the database; (4) increasing use of the database; and (5) outreach to other organisations. The funding covers an appropriate portion of the costs of the Data Manager who oversees the submission of national data into the global IWC effort.

Rank 14: Concrete steps towards an Arabian Sea humpback whale CMP (SC/69B/RP/18)
The establishment of a CMP for Arabian Sea Humpback Whales (ASHW) is a priority for the Committee. In 2022, a workshop was held in Oman, which brought together relevant government partners, NGO and industry stakeholders to introduce the

IWC CMP concept and the opportunities they offer. In 2024, the Government of Oman agreed to form a national committee to work towards the development of a CMP. This proposal aims to continue this process by hosting a second CMP workshop in Oman to: (1) further develop the national framework in Oman; and (2) hold multilateral exchanges required to develop a CMP framework.

Rank 15: Continuation of mark-recapture analysis of Southern Hemisphere blue whale photo-ID datasets to estimate regional abundance (SC/69B/RP/15)

The Southern Hemisphere blue whale catalogue contains photo-ID datasets from numerous regions comprising left and right-side photographs (SC/69B/SH/01). To maximise use of the information in these datasets, a statistical framework has been developed for integrating photos from left and right into a combined capture-recapture analysis (Zhang *et al*., 2019). Under ongoing contract R68D02 this has been implemented for Chilean blue whale populations and the analyses of Australian and New Zealand datasets are expected to be completed this year. This project will enable the work to be continued for assessment of additional blue whale populations, including Timor Leste and other Indian Ocean locations as these become available. The work is deemed high priority by the SH Subcommittee because regional abundance estimates are essential for the Committee's assessment of non-Antarctic blue whales. If not supported, progress toward this assessment will cease for the next biennium (see also the closely related project ranked #10 above).

Rank 16: Development of updated and detailed catch data series for southern right whales (SC/69B/RP/08)

The Committee is undertaking a regional assessment of southern right whales. The proposed work will advance the development a comprehensive and detailed database of SRW catches across region, which can be used to produce an updated SRW catch series that is in turn essential for an In-depth Assessment of the species. Such a database would include information on (but not limited to) geographical region, year, number of vessels, production metrics, proposed conversion ratios, struck and loss information. Where possible information on other large whale species would be included. It is envisioned that such a database will be compiled and combined within already available pre-modern whaling datasets (in whalinghistory.org), which will be available to IWC, rather than replicating efforts. This work was ranked as high priority by the SH Subcommittee because the southern right whale species assessment cannot be undertaken without accurate catches, and there are currently issues with the catch data that need to be remedied.

Rank 17: Assessment of the impact of reproductive failure on whale dispersal between Argentina and Brazil (SC/69B/RP/10)

SRWs observed annually along the coasts of Argentina, Brazil, and Uruguay belong to the Southwest Atlantic (SWA) population. Genetic, molecular, and stable isotope studies have indicated that they comprise a single expanding population. This project will apply multi-state capture-recapture models to the consolidated photo-ID catalogue up to 2019, considering different reproductive states. This work is important for understanding population trends and estimating the abundance of southern right whales in the Southwest Atlantic. Considering the wide-ranging movement of southern right whales along the coastline between different calving grounds in the region, the data generated would make an essential contribution to the ongoing assessment of southern right whales.

Rank 19: Space-time models for whale surveys with complex designs (SC/69B/RP/02)

The workshop seeks to build Committee expertise with advanced methods and tools for fitting spatial- temporal models to complex cetacean sightings data. The Committee has recognised the need for such efforts to better address its quantitative work related to abundance, assessment, human impacts, and ecosystem modelling, both current and long-term. Datasets relevant to the Committee's current work will be used in the workshop, including from Norwegian minke whale surveys in the Barents Sea, and Antarctic fin whales in the Scotia Sea, and participants can also bring their own datasets to the workshop for help with analysis. The quality and power of future analyses of datasets related to the above topics will be negatively impacted if continued expertise-building exercises like this workshop are not supported.

Rank 20: PAM for blue whales off the coast of Kenya (SC/69B/RP/14)

This project proposes to extend long-term acoustic monitoring in the southwest Indian Ocean (SWIO) using Passive Acoustic Monitoring (PAM), to investigate the occurrence of blue whales in the eastern Mozambique Channel. Previous acoustic studies have found that Antarctic blue whale song was present throughout May to September in the north Channel, and seasonally more extensively from March to October in the south, suggesting a winter breeding season aggregation and greater prevalence in the southern Mozambique Channel. Moreover, SWIO pygmy blue whale song was present bimodally with peaks of singing activity during May-July and October-January, with closely synchronous timing of two northern sites, and the southern site peaks offset by approximately two weeks earlier in the autumn and later in the spring. This pattern suggests a migratory corridor between summer feeding and winter breeding habitat south and north of Madagascar, respectively. Other data suggest that CIO and NWIO populations range into the Mozambique Channel but with lower rates of occurrence than the other blue whale populations. The SH Subcommittee noted the importance of acoustic analysis for separating blue whale populations in the region, as well as the need for such data to better allocate catches of pygmy blue

whale populations in the Indian Ocean. The SWIO blue whale population is a population for which there are large gaps in our understanding and more data are needed to progress toward regional assessment. If this work is not supported, fieldwork with be delayed, as will progress toward assessment of blue whales in this region.

Rank 21: PAM of the Eastern South Pacific Southern Right Whale CMP 2025/2026 (SC/69B/RP/11)
Eastern South Pacific right whales are Critically Endangered and CMP is in place for this population. The Committee supports a PAM project that seeks to assist in the identification of a breeding area. Three sites have been covered for up to one year along the coast of Chile (northern, central and southern Chile). Deployment of passive acoustic devices off southern Peru was planned to start 2023- 24 but the lack of some required equipment has delayed its implementation. Priorities for 2025-26 include a PAM programme off southern Peru and further acoustic data analysis.

Rank 22: Assessments of blue whale populations: Antarctic, eastern North Pacific (ENP) and central/western North Pacific (SC/69B/RP/04)
In the past decade, the Committee has prioritised stock assessments of blue whale populations in the Southern, Indian, and Pacific Oceans. Three populations are now ready for IAs. Based on evidence from blue whale song calls, there are at least two populations of blue whales in the North Pacific. The ENP population has been extensively monitored and assessed before, but the central and western North Pacific population has never been assessed due to the lack of abundance estimates for these populations. New abundance estimates will be available in 2024 from Kitakado and Matsuoka from the POWER surveys combined with Japanese surveys west of the POWER region.

Rank 23: Annotated library of offshore southern right whale sounds for testing and training automated detectors (SC/69B/RP/07)
The aim of this project is to develop and test a new, annotated training dataset and an automated detection system for southern right whale calls, to allow for efficient, timely and cost-effective analysis of vast quantities of passive acoustic monitoring data available for southern right whales. The database will focus on long-term circumpolar, Southern Hemisphere passive acoustic recordings. Focusing on this subset of recordings will help address knowledge gaps about the foraging behaviour of southern right whales, particularly on their putative offshore and high latitude feeding grounds. This detection system will be applicable to broad-scale, passive acoustic studies, will increase understanding of spatial and temporal patterns of southern right whale acoustics south of 40°S and contribute to the ongoing regional assessment of this species. If not supported, progress toward analysis of existing passive acoustic data will be slowed.

24. COMMITTEE PRIORITIES FOR THE BIENNIUM 2025-26 AND INITIAL AGENDA FOR FUTURE MEETINGS

Each subcommittee developed its priorities and a biennial workplan for 2025-26. These workplans will be used by the Chair and Vice-Chair to develop a draft agenda for the next Committee meeting.

25. WORKING METHODS OF THE COMMITTEE

25.1 Updates on Rules of Procedure and Handbook of the Scientific Committee

Considering recent changes in the way the Scientific Committee operates (e.g., move into biennial meetings, greater prevalence of virtual meetings), the Scientific Committee Handbook has been under review. The new version of the Handbook is expected to be endorsed by the Commission at its 2024 meeting.

During the intersessional period, sections of the Handbook were reviewed by the Chair, the Vice-Chair, the HoSCM and several convenors; however, several sections could only be updated once certain aspects of the working methods of the Committee had been discussed during SC69B, including the research funds/budget review process (Item 23), data availability requests (Item 25.4) and the election/terms of the SC officers (Item 25.7).

Once the SC69B Report is finalised, completion of outstanding sections of the Handbook will be possible and a small group of convenors will assist the SC leadership to complete the review. A draft of the revised Handbook will then be made available to all conveners and, subsequently, to all Committee members for comments via email for a limited period. Table 9 provides a proposed timeline to complete the review.

The Committee noted that the SC subgroups, which are established to address technical/specialist agenda items, are essential for progressing the work of the Committee. Subgroups can be created, merged or dissolved as required depending on the Committee's agenda and workplan, unless they have been established as 'Standing' groups by the Commission. These decisions and appointments are made by the SC Chair who may consult with the others (e.g. the Vice-Chair and HoSCM). SC subgroups are referred to as *Ad hoc* Working Groups, Working Groups and Subcommittees with some overlap in how these groups are defined. For simplicity, the Committee agrees that subgroups will henceforth be defined as follows:

Table 9

Proposed timeline to complete the review of the Scientific Committee Handbook for presentation to the Commission in September 2024.

Action	Actors	Date
Finalise review of the SC handbook	Chair, Vice-Chair and HoSCM	15 June 2024
Review by Convenors	Convenors	30 July 2023
Review by SC members	SC members	30 August 2024
Presentation of the SC Handbook for endorsement by the Commission	Chair, Vice-Chair and HoSCM	21 Sep 2024

(1) Subcommittees: groups established by the Chair to efficiently address long-standing issues referenced in the Convention, Schedule or as a result of a specific request of the Commission.
(2) Working Groups: groups created to accomplish a specific task (or set of tasks) expected to be achieved in the short-term which may complete their work and be dissolved. A working group can evolve into a Subcommittee if the tasks originally assigned to the group become a long-term need for the Committee.

25.2 Communications Initiative and matters related to reporting to the Commission

The Chair reminded the Committee that the aim of this initiative is to better communicate the work of the SC to the Commission (see IWC, 2023c) and presented an update on progress, specifically regarding the short summary report.

Noting the space constraints of the hard copy of the summary report, the Chair introduced the proposed structure and highlighted the contributions received from convenors and sample draft texts. The Chair also reminded the Committee that it was not possible to include every topic in this first information booklet and decisions on content would be taken by the Chair and Vice-Chair.

Double thanked the Communication Initiative Steering Committee and explained that hard copies of the information booklet will be printed in English, French and Spanish, and handed to Commissioners when they register at the IWC69 plenary. A digital copy will be circulated to all IWC69 participants and other stakeholders approximately one month before the plenary and used for many other outreach and educational purposes. The digital version will include hyperlinks to relevant sections of the SC Report to facilitate and encourage deeper exploration of specific topics.

In discussion, the Committee recognised the value of the initiative and that its products will improve communications with Commission. It was noted that succinctness and visual appeal of the information booklet are important, and it is also important to make clear that it does not cover the full SC work programme. It was also suggested that a preview of the report is shared with SC members, not least so they are prepared when asked about it by their Commissioners. The Chair agreed that it would be helpful to share a draft in advance for information purposes only.

25.3 Capacity building and succession plan for the Scientific Committee

The Committee has identified a need to ensure it is able to support the Commission in the future. Key areas of concern have been identified centred around the Committee's assessment work, particularly the recruitment and retention of expertise for the collation of comprehensive documentation, developing and archiving code and input data into shareable repositories, and the migration of models to contemporary programming languages.

The Committee has previously recommended that the highest priority be given to the completion of comprehensive documentation of all coding and input data for Implementation Trials SC23130. This critical need has been addressed in the intersessional period so that the Committee could fulfil its role in providing advice to Commission. The Secretariat Lead for Modelling and Statistics, in conjunction with relevant Committee members, have reviewed the code and input files of previous applications of the SLAs. The documentation was improved, minor changes to the code were implemented to ensure compatibility with current compilers, and the input data were updated with new catch records and endorsed abundance estimates. The proposed updates were discussed in IST and the results of these discussions were implemented for the 2024 application of the SLAs. The decisions, their rationale and the way the SLAs were implemented are now fully documented in Annex L and auxiliary documents accompanying the code are currently stored in restricted-access GitHub repositories. Guides to updating and applying the SLAs are now being finalised. The preparatory work saved valuable time at the SC69B meeting and provided greater transparency of the process used to provide management advice. This progress in documentation and organisation will greatly assist in future computations.

Now that this critical issue has been addressed, succession planning can focus on other pressing issues. The Committee has previously identified a significant risk that a small number of scientists have the skills, understanding, and experience required to undertake complex modelling for assessments and IWC management procedures. A proposal has been developed that details a plan for facilitating knowledge transfer and training scientists with the requisite skills to undertake the Committee's modelling work (SC/69B/RP/24). The plan aims to expand modelling expertise within the Committee, including developing hands-on training resources for IWC assessment and related management processes. The Secretariat has also identified a critical need for additional resources to support the increasing workload of the Department for

Modelling and Statistics. The Committee noting the importance of the identified impediments to progressing its work and acknowledging the risk of having such a restricted pool of modelling expertise, **agrees** that supporting modelling and computational work is a priority and strongly supports the Secretariat's request for funds to improve capacity and de-risk the processes that provide critical advice to the Commission.

Attention: C, S
*The Committee **recommends** that adequate and continual funding is provided to the Secretariat to strengthen capacity in the Department of Modelling and Statistics, in order to fully support the key modelling and assessment work of the Committee.*

25.4 Update on data availability requests and consideration of potential updates/clarifications

The Data Availability Group (DAG) oversees the data request procedures outlined in the IWC Data Availability Agreement (DAA) and Scientific Handbook. The rules for data availability, summary lists of the available data, protocols for data access, agreement forms and contact points can be found on the IWC website. Additional data availability rules associated with the SORP and ASI Subcommittee have been developed, with plans for ASI to review the latter. The databases maintained by the IWC can be made available to researchers depending on agreed access rules, relevant procedures and levels of IWC support.

The GDR ICG highlights the need for ongoing maintenance of IWC data repository, an issue which is being discussed in the BSC as a separate and priority item.

25.5 Governance review update following IWC68

There are currently no discussions under the governance review that have implications for the Committee. The discussions within the Working Group on Operational Effectiveness will be monitored by the HoSCM. The Chairs will be notified if anything arises of interest to the Committee.

25.6 Joint Conservation Committee-Scientific Committee Working Group

The report of the 2023 meeting held directly after SC69A is available from the IWC website here. The next meeting of the Joint Working Group will be held online on 9 May 2024. Participants must register to join the meeting. Registration details and a draft agenda are included in Circulars IWC.ALL.474 and IWC.ALL.475.

25.7 Election of officers

25.7.1 Terms of the SC Officers

The SC is expected will move to a biennial meeting cycle starting in 2025. This will make the election of officers more challenging as currently the terms for the SC Chair and Vice-Chair are both three years. To match the new Biennial cycle, the Committee **recommends** changing the terms of the SC officers to two years, commencing in 2025. This will mean there is no need to elect an officer in non-meeting years and two-year terms are consistent with those of the Commission Chair and Vice-Chair.

The Committee recognises that a two-year term could be insufficient for the Vice-Chair to gain the necessary experience to become an effective Chair. Therefore, the Committee **recommends** the creation of the position of a Vice-Chair Elect, who would become more involved in the work of the Committee, working closely with the Chair and the Vice-Chair, with the understanding that they would move into the Vice-Chair position in the next cycle.

A proposal will be submitted at IWC69 to the Finance and Administration Committee with proposed changes to the Rules of Procedure to reflect this change. The Committee recognises that this new approach may require changes in the existing Rules of Procedure for the Voluntary Assistance Fund to allow for broader participation.

This was the final year of office for the Chair (Zerbini) and the Vice-Chair (Porter). In accordance with its Rules of Procedure, the Vice-Chair automatically becomes the new Chair. The Committee elects Lang to be the new Vice-Chair and should the creation of Vice-Chair Elect be confirmed, the committee elects Nelson. The Committee rose in appreciation to thank the outgoing Chair. It wished to formally record its great thanks for his wise, fair and good-humoured Chairing over the last three years. The Committee also welcomed with enthusiasm the new team of Porter, Lang, and possibly Nelson. Porter thanked Zerbini for his support over the last three years, and with a nod to her native country, Scotland, she read a self-penned humorous poem in the style of Robert Burns, which can be found in Annex Y. The Chair expressed his deep appreciation to the Convenors, other members of the Committee, members of the Secretariat, and, especially, Porter and Staniland, for the support received during his term.

25.8 Any other business

25.8.1 Proposal for social media programme to highlight endangered species

Rose proposed a new social media initiative to promote the work of the SC and inform the wider public about the conservation status of cetaceans. A regular series of social media posts was proposed, each featuring an endangered species of cetacean and based on the IUCN Red List. The work would be undertaken by the Secretariat, and it was suggested that an intern

could produce the posts, with scientific content supplied by members of the Committee. Rose also suggested conferring with the person responsible for similar, successful social media content produced for the Marine Mammal Protection Act coalition in the USA.

On behalf of the Secretariat, Wilson thanked the proponents and agreed that this proposal is consistent with the goals of the IWC's long-term communications programme, and similar to a previous 'Species of the Week' initiative which had worked well but not continued due to limited resources.

In response to this proposal, the Secretariat is scoping an eight-week internship, dedicated to creating at least one year's worth of social media content. Support from Committee members will also be essential, and Wilson suggested seeking volunteers via a Circular Communication to be sent shortly after the meeting.

In discussion, the Committee supported broadening the focus to include both endangered and recovering species and relating these posts to the IWC work programme. It was acknowledged that the success of this initiative relies on sustainability. The Secretariat's communication resources are extremely limited, and this work can only go ahead if an intern can be engaged and strong and continued support from the Committee is committed.

25.8.2 Proposals to introduce new terminology

SC/69B/O/04 suggests the IWC can take a pioneering role to adopt language that reflects, emphasises and promotes the interconnection between humans and other species. It seeks to spark a discussion about the use of terms that are ambiguous, unclear, misleading or that view non-human animals from a utilitarian perspective. The Committee thanked the authors but noted that the contents of this paper did not deal with scientific issues and fell outside the Committee's work. While the Committee has considered terminology before, this has been confined to encouraging the consistent use of terms across the SC.

26. PUBLICATIONS

The *Journal of Cetacean Research and Management* (JCRM) is the IWC's open-access and peer-reviewed journal, which publishes original scientific research on the conservation and management of cetaceans, in addition to a supplement which contains the Scientific Committee report.

The HoSCM acts as Editor of JCRM, supported by Naylor and Davies (Secretariat), while the Editorial Board comprises members of the Committee who volunteer their time and expertise, including three new members: Li; Minton; and Olson.

JCRM Volume 24[13] closed at the end of 2023, with a total of 17 papers – a 40% increase on Volume 23 (2022). To date, these papers have generated an average of 853 interactions, including both abstract views and file downloads.

JCRM Volume 25[14] launched at the start of 2024 with the publication of Scordino *et al.* (2024) which generated 1,163 interactions in the first month. The Editorial Board continues to promote JCRM as the natural destination for the Committee's work and therefore encourages Convenors to recommend suitable primary papers for publication.

The 'Southern Ocean Whale Ecosystem Research' (SOWER) Special Issue[15] launched at the start of 2024, with the publication of five papers and more to come. The Editorial Board thanks Palka for her archival research while overseeing the publication of this Special Issue.

The Editorial Board is also pleased to announce the launch of a new special issue – 'Cetacean Tagging: Advances and Insights'[16] – and will continue to accept submissions until September 2024.

The Editorial Board remains keen to raise the profile of JCRM within the research community, with a range of proposals, such as increasing JCRM's visibility on the IWC website, formalising its citation index and promoting JCRM at relevant meetings and scientific conferences.

The Editorial Board is keen to hear from members of the Committee who are interested in either submitting new research or reviewing submissions.

27. ADOPTION OF REPORT

The Committee adopted this report on 3 May 2024. The Chair thanked all participants for their time and expertise. The Chair voiced special thanks to the Vice-Chair, Convenors and rapporteurs for their support and hard work throughout the meeting and its preparation. The Secretariat staff were thanked for their tireless efforts to make the meeting a success. At IWC69, the Chair will step down from the role and on behalf of the Committee, the Vice-Chair and HoSCM thanked him for his incredible leadership and dedication throughout the last six years (Annex Y).

[13] https://journal.iwc.int/index.php/jcrm/issue/view/37
[14] https://journal.iwc.int/index.php/jcrm/issue/view/68
[15] https://journal.iwc.int/index.php/jcrm/issue/view/67
[16] https://journal.iwc.int/index.php/jcrm/issue/view/69

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