

Annex P

Report of the Subcommittee on Other Southern Hemisphere Whale Stocks

Participants: Bell (Convenor), Agrelo, Aguilar Arakaki, Allison, Babey, Baker, Banga, Barreto, Barros, Biuw, Branch, Brownell, Burkhardt, Buss, Butterworth, Carroll, Cassani, Cerchio, Charlton, Chauca Huánuco, Childerhouse, Cholewiak, Chopara, Cisternino, Clarke, Collier, Collins, Cooke, Coscarella, Cremer, Cubaynes, Dalla Rosa, Di Tullio, Double, Edyvane, Evangelista, Ferreira, Fewster, Findlay, Fruet, Fyfe, Galletti, Germishuizen, Goetz, Harris, Heinemann, Herr (Convenor), Iida, Iñíguez, Isoda, Jimenez, Johnson, Katara, Kelly, Kema Kema, Kim, Kitakado, Lang, Leal, Leaper, Lee, Li, Lleellish, Lucke, Luna, Lundquist, Lysenko, Maeda, Mallette, Marcondes, Marmontel, Matsuoka, Minton, Mizroch, Natoli, Nelson, Øien, O’Loughlin, Olson, O’Shannessy, Palazzo, Palka, Panigada, Passadore, Porter, Rand, Reeves, S., Robson, Rojas Urrego, Romero, Rowles, Sackett, Sagalés, Schubert, Seyboth, Shabangu, Širović, Staniland, Thomas, Van Waerebeek, Vely, Vermeulen, Walløe, Warrie, Webster, Weinrich, Weir, Wichman, Zerbini.

1. INTRODUCTORY ITEMS

1.1 Convenor’s opening remarks

The Subcommittee was reminded that the purpose of the Southern Hemisphere Whale Stocks Subcommittee is to compile information on Southern Hemisphere whale populations, identify data and data gaps, assess data quality and determine the feasibility of conducting assessments of each population, and when this could be done. Ultimately, this Subcommittee identifies preliminary populations and hypotheses to be passed to the In-Depth Assessment Subcommittee for in-depth or comprehensive assessments.

1.2 Election of Chair

Elanor Bell and Helena Herr were unanimously elected as co-chairs.

1.3 Appointment of Rapporteurs

Rapporteurs were appointed for southern right whales (Vermeulen), blue whales (Branch) and for all other items (Širović).

1.4 Adoption of the agenda

The agenda was adopted with no modifications.

1.5 Review of documents

Relevant documents: SC/69B/SH/01-19, SC/69B/ASI/04, SC/69B/EM/03, SC/69BSAN/01, SC/69B/REP/05, Attard *et al.* (2024) (FI04), Liyanage *et al.* (2022) (FI12), O’Shannessy *et al.* (in review) (FI26), O’Shannessy *et al.* (2024) (FI32), Stamation *et al.* (2020) (FI19), Wöhle *et al.* (2023) (FI02), Germishuizen *et al.* (in review) (FI40)

2. IWC-SOUTHERN OCEAN RESEARCH PARTNERSHIP

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 delivering coordinated and cooperative Southern Ocean cetacean 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 United States of America. The IWC-SORP ethos is one of open collaboration, communication and data sharing. It welcomes new partners.

There are seven endorsed 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.
7. Recovery status and ecology of Southern Hemisphere fin whales.

Proposals for new themes are welcomed by the IWC-SORP Scientific Steering Committee. Research performed and data collected under IWC-SORP auspices has contributed to the work of multiple subcommittees and working groups, in particular SH, SAN, CMP, PH, IA and EM; has informed reviews of the Southern Ocean Sanctuary; and contributed to the development and implementation of photo-ID and genetic catalogues.

SC/69B/SH/05, the IWC-SORP Annual Report 2023/24, reported progress of research undertaken within the seven themes since last year. Expeditions were conducted around the western Antarctic Peninsula, the waters off the Australian Research Stations Mawson and Davis, the sub-Antarctic Marion Island and Prince Edwards Islands, the Saint Paul and Amsterdam Islands, in the waters off South Africa, eastern and western Australia, New Zealand, Chile and around Peninsula 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 whales, southern right, fin whales 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 made and analysed.

IWC-SORP researchers, produced *ca.* 20 peer-reviewed publications during 2023/24, bringing the total number published since the start of the initiative to *ca.* 311. Since 2009, more than 235 IWC-SORP-related papers have been submitted to the Scientific Committee for consideration; 17 of them this year. Moreover, the initiative has directly contributed to at least 21 PhD., 17 Masters and 17 Honours theses, plus the work of at least five postdoctoral fellows.

SC/69B/SH/06 provided more detail on the progress of six ongoing research projects supported by the IWC-SORP Research Fund following three open, competitive grants rounds (2016-present) and on two projects that received discretionary funding intersessionally. Recent voluntary contributions to the IWC-SORP Research Fund made by the Governments of Australia and Belgium and Emma Abel, as well as previous voluntary contributions made by the governments of 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 and unspent in the IWC-SORP Research Fund (SC/69B/O/09).

A Call for Proposals opened on 12 January 2024 and closed on 29 February 2024. Thirteen proposals were received and all deemed eligible for assessment. The Assessment Panel included 16 members of the IWC Scientific Committee and was chaired by the Chair of the Scientific Committee of the IWC, with support from the IWC-SORP Secretariat. A suggested allocation of funds to successful projects was proposed by the IWC-SSC Assessment Panel and the IWC-SORP Scientific Steering Committee and agreed by the Scientific Committee, and will be presented to the Commission for endorsement during IWC69. Chief Investigators of the successful proposals will be notified as soon as possible thereafter. Funding will be made available for project commencement from January 2025 onwards.

The Subcommittee **thanked** all those involved in the consortium for their efforts and **recognised** the substantial contribution that IWC-SORP makes to work of the Scientific Committee. In discussion, it was noted that the IWC-SORP is cross-cutting, highly collaborative, builds capacity, provides opportunities for early-career development, and has contributed to methodological and technological advancements. The Subcommittee **thanked** Bell for her work in the role of IWC-SORP Secretariat, and the IWC Secretariat for administrating the IWC-SORP Research Fund – particularly Pinder, Bartmeier and Jones. The Subcommittee **commended** the hard work involved in the coordination and execution of the Partnership.

The Subcommittee **agreed** that the IWC-SORP initiative has continued to be extraordinarily productive in terms of scientific information produced and the number of refereed publications generated by IWC-SORP supported projects. The Subcommittee **strongly encouraged** that the Partnership be continued.

Attention: SC, R, G

*The Subcommittee **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 they:*

*(1) **strongly encourage** the continuation of the Southern Ocean Research Partnership; and*

(2) **encourage:**

- (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-identification data, to IWC-SORP and the wider Committee; and
- (d) the continued, collaborative development of technologies and methodologies that advance the abovementioned priorities.

The Subcommittee received an update regarding a visual cetacean survey conducted between 7 February and 12 March 2024 aboard the icebreaker *ARA Almirante Irizar* in the Beagle Channel, Drake Passage, islands at 61°00'–63°37'S, 53°83'–62°83'W, northeast and northwest of the Antarctic Peninsula, Scotia Sea (Mar del Scotia), and Weddell Sea. Further details can be found in SC/69B/SH/05, Theme 1 report. The Subcommittee acknowledged that this is a repeated, multi-year effort and repeated **thanks** to the supporters of this research listed in SC/69B/SH/05. This is an international collaboration including Brazilian, Chilean and Spanish partners, and further collaborations are welcomed.

SC/69B/SH/17 summarised cetacean acoustic activity monitored at three different sites over three consecutive years (2014, 2015 and 2016) in the vicinity of the Antarctic Peninsula. Acoustic time series were generated for a variety of cetacean acoustic signals, including mysticete (blue whale D and Z calls, fin whale 20 Hz calls, and humpback whale calls) and a variety of odontocete signals. Acoustic recorder deployments covered between 131 and 353 days of effort per year. The time series were compared to sea ice data from the respective period and site, to make observations between sea ice coverage and cetacean presence. When sea ice coverage began to decrease, humpback whale occurrence and blue whale social calls appeared to increase. Fin whale song decreased as sea ice formed.

This data collection and analysis represented one example of collaborations between multiple international partners within IWC-SORP. In discussion, the utility of these data for southern right whale acoustic analysis was raised. The authors noted that preliminary analyses had identified no right whale calls in these recordings, but that data could be made available for further review upon consultation with partners.

3. NON-ANTARCTIC BLUE WHALES

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 the song-type characteristically heard in their core range. Currently recognised populations occur in the south-east Pacific Ocean (SEPO) including the Galapagos to Chile; north-west Indian Ocean (NWIO) from Oman to Madagascar; central Indian Ocean (CIO) from Sri Lanka to the southern Indian Ocean; south-west Indian Ocean (SWIO) from Madagascar to Kerguelen Islands; south-east Indian Ocean (SEIO) from Tasmania westward to Indonesia; and south-west Pacific Ocean (SWPO) from New Zealand to Tasmania. A subspecies status for Chilean blue whales is not yet confirmed, 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*).

In 2024, the Committee received new information on population structure, distribution, local population abundance and photo-ID matching.

3.1 Population structure

In 2023, the Committee recommended the joint consideration of new genetic information (subsequently published by 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, 2023, item 8.2.2.1).

Attard *et al.* (2024) used population genomics to infer the number, distribution and other characteristics of blue whale subspecies and populations. They used the largest DNA dataset for blue whales, both in terms of genomic markers (16,661 SNPs and mtDNA) and geographic coverage ($n=276$ for SNPs; $n=531$ for mtDNA), finding greatest divergence among the eastern Pacific, Indo-western Pacific and Antarctic blue whales. Within these regions, there was divergence between the eastern North Pacific and eastern South Pacific, and among the eastern Indian Ocean,

the western South Pacific and the northern Indian Ocean. These findings are consistent with the current classification of Indo-western Pacific blue whales in the Southern Hemisphere as different subspecies, but call into question the subspecies taxonomy of eastern Pacific blue whales. The study shows that opposite breeding seasons on either side of the equator do not necessarily inhibit connectivity across the equator and reinforces that population structure needs to be well understood to conserve the diversity within species.

Review by the SD-DNA Subcommittee concluded that population separation was confirmed for the SEPO, SWIO, and SWPO populations; but the limited available evidence did not support NIO blue whales as a separate subspecies (*Balaenoptera musculus indica*) from SEIO and SWPO pygmy blue whale (*B. m. brevicauda*) populations. Furthermore, the low level of divergence detected between the NEPO and SEPO suggests some gene flow across the equator in the eastern Pacific. However, the significant differentiation identified between the NEPO and SEPO indicate that the extent of interbreeding is likely to be low. The SD-DNA Subcommittee also noted the lack of genetic information from the South Atlantic.

The SH Subcommittee expressed its appreciation for the comprehensive genetic analysis, noting its value for the ongoing pre-assessment. The Subcommittee **encouraged** the collection and analysis of more biopsy samples from the non-Antarctic portions of the South Atlantic and the islands at 54°-55°S, 36°-38°W, which are currently presumed to be Antarctic blue whales, including those from recent sightings off Brazil. Similarly, additional data is desirable from the NIO (e.g., Oman, Sri Lanka, India) to determine the population and subspecific status of the NWIO and CIO populations, which are currently separated by their distinct song types. Moreover, additional samples would be useful from the SWIO, where substantial numbers of pygmy blue whales and Antarctic blue whales were caught.

Attention: SC, R

*The Subcommittee **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 northern Indian Ocean (NIO, i.e., Oman, Sri Lanka, India) to determine the population and subspecific status of the NWIO and central Indian Ocean (CIO) populations; and*
- (3) the southwest Indian Ocean (SWIO) to inform about pygmy blue whales in co-occurrence with Antarctic blue whales, as suggested by catch data.*

3.2 Acoustic studies

SC/69B/SH/04 reported on acoustic implications for baleen whales, which can be divided into 'fight' and 'flight' species based on their reactions to killer whale attacks. Fight species are slow-moving, maneuverable, displaying group or single defense against attacks on their calves, and migrating and breeding in denser aggregations in shallow coastal waters. Flight species are sleek, fast-swimming, flee on contact with killer whales, and migrate and breed while dispersed in pelagic waters. One corollary to this hypothesis is that male singing in fight species should involve competition among groups with more colorful and interesting singing, while in flight species, males should sing loudly and more monotonously to attract distant mates. Since fight species rely somewhat on group defense and return reliably to the same areas to calve and mate, they do not need to hide acoustically from killer whales; but loud-singing flight species would be more susceptible to being located by killer whales. This suggests a possible role for acoustic crypsis, which has been reported for some species of toothed whales that only call at frequencies that are too high for killer whales to hear. This paper examined whether baleen whale flight species (unlike fight species) call at low frequencies that are difficult (<1,500 Hz) or impossible (<100 Hz) for killer whales to hear. The review showed that five out of six fight species call at higher frequencies ($\geq 4,000$ Hz) and with high source levels (>175 dB re 1 μ Pa at 1m) and can be heard by killer whales from at least 100km away, while the sixth fight species (gray whales), frequently attacked by killer whales on migration, call at quieter source levels (157 dB) and can be heard only within 15km. For flight species, the opposite pattern was clear: six out of eight flight (or likely flight) species call with some combination of low frequencies (<1,000 Hz) or low source levels (≤ 175 dB), such that they are either acoustically invisible to killer whales or can only be heard by nearby (<10 km) killer whales.

In discussion it was noted that there are basic relationships between animal size and the frequencies and intensities that are possible, with the largest whales more able to produce more intense calls at lower frequencies. However, the range of call frequencies does not correlate well with species size, with some of the largest flight species making both low and higher frequency songs, while some of the smallest flight species do not call at higher frequencies. It was also pointed out that while calls might be made over a wide range of frequencies, and only the highest frequency was used to estimate the distance at which killer whales can hear the calls, usually the highest intensity calls are at

lower frequency ranges, and furthermore higher frequency calls attenuate more rapidly than lower frequency calls. Therefore, a more sophisticated analysis that examines both intensity and frequency across the range of calls would produce more accurate estimates of the distances over which killer whales could hear the calls of different baleen whale species.

3.3 Pygmy-type blue whales

3.3.1 Southeast Indian Ocean

SC/69B/SH/19 presented new data on sightings from the northern coast of Timor Leste, where pygmy blue whales migrate from Indonesian waters to Australia and other southern summer feeding regions. The northbound migration here is typically June to August, and the southbound migration is late September to December. During the peak southbound migration (4-6 weeks), daytime sightings average 15-20 per day, and up to 31 when nighttime observations are included. During 2020-2023, there were 356 to 486 sightings annually during the southbound migration. Sightings include many mother-calf pairs, mostly large calves but also substantial numbers of small neonates, and suckling behaviour has been videoed. Potential courtship behaviour has also been observed. In addition to mother-calf pairs, sightings include single individuals, mother-calf pairs with assumed male escorts, and groups of 2-8 travelling adults. At the narrowest passage point in Dili, the Ombai-Wetar Strait is only 25km wide, and at the main observation point to the east of Dili in Subaun to Behau, blue whales pass particularly close to the shore. Blue whales here are frequently seen surface lunging, fluke-up diving, circling, and defecating, and individuals exceptionally remain resident for up to three days. In total, 2475 individuals have been sighted during the southbound migration and 114 during the northbound migration, between 2014 and 2023. From 2016 to 2022, 250 photo-identification records have been obtained, most of which are already uploaded to the Southern Hemisphere Blue Whale Catalogue. The main threats and challenges to blue whales in this area are ship strikes due to their migration pathway passing through the center of the busy shipping port of Dili, and a rapidly growing whale-watching and swim-with-whales industry based in Dili.

The Subcommittee welcomed the valuable new information from Timor Leste, **thanked** the author for bringing the data to the attention of the Subcommittee and acknowledged that photo-ID data has already been submitted to the Southern Hemisphere Blue Whale Catalogue (SHBWC). Ongoing submission of additional photo-ID data to the SHBWC was **encouraged**. The Subcommittee noted the value of this unique location for conducting shore-based abundance estimation using methods similar to those used for eastern North Pacific gray whales. The Subcommittee were informed that infrared cameras are being deployed this year to estimate the proportion of blue whales that pass during the night. In discussion, it was suggested that deploying hydrophones would provide valuable information that could contribute to acoustic abundance estimation via estimates of the proportion of calling individuals when combined with visual observations, especially at the narrow portion of the strait between Dili and Atauro Island.

Attention: R

*The Subcommittee **encourages** the ongoing submission of additional blue whale photo-ID data from regional photo collection holders in Timor Leste to the Southern Hemisphere Blue Whale Catalogue (SHBWC).*

The Subcommittee also **expressed concern** about the growth in whale watching and swim with activities. This issue was discussed in detail by the WW Subcommittee (Annex R, item 3.3).

SC/69B/SH/07 presented new information on possible pygmy blue whale sightings between Australia and Indonesia during the mid-1800s by British and American open-boat whalers. During the whalers' search for sperm whalers in the deeper waters of this region, they often recorded sightings of whales, with sperm and humpback whales identified by species, but rorquals all recorded as 'finbacks'. Off north-western Australia and in Indonesian waters, sightings of fin, sei, and minke whales are exceedingly rare, but pygmy blue, Bryde's and Omura's whales are common. An examination of whaling logbooks in the region included 11 voyages by American and British whalers, recording a total of 98 'finback' sightings by British whalers and 25 sightings by American whalers. Only once was a blue whale reported as a 'sulphur bottom', and this involved a rare pre-modern-whaling capture of a blue whale by the *Rodman* using a bomb lance on 11 August 1857 to the southeast of the island of Sumba. The great majority of the 123 'finback' sightings align with modern satellite tag data (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. Modern satellite data show a much larger number of blue whales ending their migration in the more southern Banda Sea, but the sperm whalers only transited through this region spending almost no time there because this was not sperm whale habitat. 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.

In discussion it was noted that there are many of Omura's whales in this region, but they are usually found on the shelf and not on the slope or in the deep waters where most of the sperm whalers' effort was concentrated, and therefore these sightings probably were pygmy blue whales.

3.3.2 Southwest Indian Ocean

SC/69B/SH/18 presented information for Antarctic and pygmy blue whales off western Madagascar, in the Mozambique Channel. Passive acoustic recorders were deployed at three sites (at 220-280m depth) spread along approximately 1,400km of coast, at Nosy Be (13.28°S 48.01°E), Mahajanga (15.33°S; 46.18°E), and Toliara (23.46°S 43.63°E), between December 2016 and August 2021, with varying temporal coverage across the five years among sites. Manual review of spectrograms from 3,134 days of recording revealed extensive documentation of Antarctic blue whale and SWIO (Madagascar) pygmy blue whale song-types, in addition to lower occurrences of CIO (Sri Lanka) and NWIO (Oman) blue whale song types. Antarctic blue whale song was present from May to September at the two northern sites, and seasonally more extensively from March to October in the southern site, suggesting a winter breeding season aggregation and greater prevalence in the southern Mozambique Channel. SWIO pygmy blue whale song was present bimodally with peaks of singing activity during May-July (late autumn/early winter) and October-January (late spring/early summer), with closely synchronous timing of the 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. It is recognised that the summer feeding habitat is the Madagascar Ridge, and proposed that the winter breeding range are the equatorial waters between 43°-55°E, encompassing the region of illegal Soviet whaling in the 1960s and recent modern sightings off Kenya. CIO and NWIO blue whale song types were detected infrequently off the most northern site, but more extensively off Mahajanga, indicating these populations range into the Mozambique Channel but with lower rates of occurrence than the other blue whale populations.

The Subcommittee welcomed this information and **commended** the authors for the long-term acoustic effort, acknowledging the importance of acoustic analysis for separating blue whale populations in the region. In discussion, the question was raised about the relationship between SWIO blue whales heard in the Mozambique Channel and those heard to the east of Madagascar and south to 55°S. The Subcommittee was informed that in 2018 far fewer calls were detected in December than in other years and it is possible that these SWIO blue whales may have migrated around the eastern side of Madagascar instead of the western side in that year.

It was pointed out that these results have implications for catch separation of pygmy blue whale populations in the Indian Ocean, since previous work fitting spatial models to passive acoustic data SC/69A/SH/09, had allocated catches north of Madagascar to the equator to the NWIO and CIO populations and not the SWIO population as proposed by SC/69B/SH/18. In response, it was noted that new data was available from a shallow-water hydrophone in the Seychelles (3.76°S 55.68°E), but only CIO song was detected, largely in December–April, and not SWIO song (Stafford *et al.*, 2023). Therefore, the catch separation algorithm would now be even more likely to allocate equatorial catches to the CIO population and not the SWIO population. The Subcommittee **recommended** the collection of passive acoustic data from offshore Kenya, where blue whales have been sighted in winter months (Barber *et al.*, 2016), to resolve whether catches in these equatorial waters off Kenya and west of the Seychelles were SWIO blue whales (as proposed in SH18) or CIO/NWIO blue whales.

Attention: SC, R

*The Subcommittee **recommends** the collection of passive acoustic data from offshore Kenya to resolve whether catches in these equatorial waters off Kenya and west of the Seychelles were SWIO blue whales or CIO/NWIO blue whales.*

The Subcommittee received an update on passive acoustic research off Durban, South Africa. Large numbers of blue whales were caught off Durban during shore whaling during the 1900s, and are currently assumed to comprise mostly Antarctic blue whales with a few pygmy blue whales identified. Committee funding was used to deploy a hydrophone off Durban in early 2022, but many recovery attempts failed to retrieve it before a trawler trawled up the acoustic release and the hydrophone was lost. Another deployment is planned this year and the hydrophone will be retrieved every six months.

The Subcommittee expressed their regret for the lost hydrophone and welcomed continued efforts, since Durban catches are a key uncertainty in the catch history for separating Antarctic blue whale and SWIO catches. The Subcommittee looks forward to receiving an update at SC/70.

3.3.3 Central Indian Ocean

Liyanage *et al.* (2022) presented a blue whale abundance estimate for Sri Lankan waters, that was assessed by the ASI Standing Working Group. Since this cruise was an ecosystem survey not focused on marine mammals, some aspects of the survey design were considered problematic for unbiased estimation of abundance. In particular, many of the transect lines were placed parallel to the coast instead of perpendicular, which would increase sightings of some species, and observations made during experimental trawls at lower vessel speeds were included in the analysis. Therefore, the ASI Standing Working Group considered this abundance to be **Not Suitable** for use in assessments of population status (Annex D).

The Subcommittee noted that no accepted abundance estimates are available for this population of blue whales, but that such data are needed for stock assessment purposes. The Subcommittee encouraged the collection of additional information including photo-identification that could be used in mark-recapture estimates.

Attention: SC, R

*The Subcommittee **encourages** collection of photo-ID data from the central Indian Ocean (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, to inform abundance estimates for the CIO population, for which none currently exist.*

3.4 Progress on population assessment

SC/69B/SH/16 reports preliminary analysis of capture-recapture data from two Chilean blue whale feeding grounds: a southern site in the vicinity of Isla Grande de Chiloé (42°S) and a northern site from Isla Chañaral (29°S). The data consist of bilateral left and right-side photo-identifications. This creates analytic challenges because some animals are likely to appear in two unreconciled capture histories, one from the left and one from the right, but the number of these double-counted individuals is unknown. A modelling approach accounts for this aspect of the data, and preliminary estimates suggest that the population on the southern feeding ground experienced a significant decline of about 3% per annum during 2004-2017, while the population on the northern feeding ground appeared roughly stable or even slightly increasing. The authors solicited feedback from the SH Subcommittee on the analysis performed and the preliminary results presented.

The Subcommittee raised no concerns about the analysis and welcomed the preliminary results. In discussion, it was noted that additional data for the southern feeding ground from 2016 and 2017 are available that would add to the capture histories at the end of the time series, and that this would be particularly useful since data are more influential at the start and end of the time series. The Subcommittee **recommended** that Galletti collates and reconciles the additional mark-recapture data for inclusion in the model. The relationship between the whales from the southern and northern feeding grounds was queried, and it was noted that although there are no photo-ID recaptures between them, they are not genetically different.

Attention: SC, R

*Given the concerning potential decline in the number of Chilean blue whales in the southern feeding ground, the Subcommittee **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.*

The Subcommittee **expressed concern** at the estimated 36% decline in the population in the southern feeding ground over 14 years, and low estimated recruitment of only 1% per year. A past mark-recapture analysis (Galletti-Vernazzani *et al.*, 2017) found smaller than expected increase rates of 2-3% in this region. Two main explanations for the potential decline were discussed: 1) a real decline; and 2) movement outside the study region. The estimated decline is not easily explained by the limited number of observed mortalities, although most deaths are never detected in blue whales. Ship strikes are the main human-caused danger to the population, accounting for at least two of the five known recent mortalities. The Subcommittee **encouraged** broader scale sighting surveys and passive acoustic monitoring to determine if blue whales in the region had moved to areas further offshore or at different latitudes.

Attention: SC, R

The Subcommittee **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 blue whales in the southern feeding ground moving to areas further offshore, the Subcommittee **encouraged** broader-scale sighting surveys and passive acoustic monitoring around the southern Chilean feeding ground.

SC/69B/SH/01 reported on the Southern Hemisphere Blue Whale Catalogue (SHBWC), which includes a total of 2,697 individual blue whale photo-identifications (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, Chilean datasets were checked and compiled and are currently being used for modeling abundance estimates. Photo-ID comparisons with new entries from Australia were prioritised. Left and right-side comparisons have already been completed. Other regions that have contributed important data but have still not been compared are Timor Leste, Sri Lanka, ETP and Galapagos.

The Subcommittee welcomed the vital efforts in the intersessional period and thanked Galetti for the expedited matching effort of Chilean data to enable the timely commencement of the mark-recapture analysis reported in SC/69B/SH/16. The Subcommittee noted that the SHBWC is a long-term initiative financially supported by the Committee to deliver regional photo-ID based mark recapture estimates of blue whale abundance and noted that the presented work addressed recommendations made previously by the IWC (completion of matching of SEPO and SEIO) (IWC, 2023, item 8.2.1.4).

To progress with regional abundance estimates of non-Antarctic Southern Hemisphere blue whale populations, the Subcommittee refined existing priorities and considered secondary priorities.

During SC69A (IWC, 2023, item 8.2.1.4), it was agreed to prioritise analyses of SEPO (Chilean) data, followed by SEIO (Australian) data and SWPO (New Zealand) data. These priorities were maintained but the inclusion of additional 2016 and 2017 data into the SEPO analysis was also prioritised. Matching the Timor Leste photo-IDs were considered the next most important priority.

In previous years, the Committee had agreed that priority be given to matching within-region photo-IDs that will provide mark-recapture data for abundance estimation, rather than to those from connected areas that will increase understanding of population connectivity and migratory destinations. Therefore, matching Timor Leste had been given lower priority. Based on new information provided in SC/69B/SH/19 and SC/69B/SH/07, the Subcommittee recognised the importance of estimating the proportion of southbound blue whales past Timor Leste that are heading to destinations other than Australia. Australian catalogues are from Perth Canyon, Geographe Bay, and Bonney Upwelling, but some unknown proportion of SEIO blue whales are likely migrating to the south Indian Ocean west of Australia and to the Great Australian Bight. Therefore, the Subcommittee **recommended** matching of Timor Leste data as a secondary priority following SEPO and Australian data. It was agreed that the mark-recapture analysis of the SEIO population would first proceed with the Australian data set alone, and that Timor Leste data will be added as they become available.

Attention: SC, R

In order to complete pre-assessments of Southern Hemisphere non-Antarctic blue whales, the Subcommittee **recommends** that development of the Southern Hemisphere Blue Whale Catalogue (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 south-east Indian Ocean (SEIO) data; and
- (3) matching and quality control of Timor Leste datasets.

The Subcommittee:

- (1) **recommends** the continued intersessional mark-recapture analysis of the south-east Pacific Ocean (SEPO), followed by analysis of the SEIO and south-west Pacific Ocean (SWPO) blue whale datasets;
- (2) **recommends** the addition of Timor Leste data in the SEIO analyses when matching has been completed; and
- (3) **encourages** submission of new photo-IDs from the central Indian Ocean (CIO), south-west Indian Ocean and north-west Indian Ocean areas to the SHBWC, to support future mark-recapture analyses of regional abundance.

SC/69B/SH/08 presented an overview of the proportion of mother-calf pairs sighted in blue whale populations worldwide, which average 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. Multiple hypotheses were developed and examined to explain this apparent low proportion of sighted calves. Accounting for males and immature individuals in the population reduced the expected proportion of mother-calf pairs to 7-12%, and some mother-calf pairs may avoid aggregations of blue whales where field studies are concentrated. A timing hypothesis was able to explain most of the remaining observations by assuming that blue whales produce calves shortly after departing their summer feeding grounds and wean their calves seven months later as they return to their summer feeding grounds, in combination with some variability around calving dates, and a small proportion of calves being born at any time of the year. Based on these assumptions, a conceptual model predicted that observed mother-calf proportions should peak in winter at 8-9% and be at a minimum of 1-4% in summer. These predictions matched the low proportions observed in seven out of eight summer feeding regions (1.5-3.5%), but not off New Zealand (9.8%), while in two winter studies, the observed proportion was close to predicted in the Timor Trough (9.3%), but lower in the Galapagos (3.8%). The lowest proportion was reported from Sri Lanka (0.7%), where blue whales reside year-round. These results suggest that the mystery of the missing blue whale calves can largely be explained by peak calving immediately after leaving summer feeding grounds, and peak weaning on or before their return.

During discussion, the Subcommittee were informed that, although many large calves were sighted on the southbound migration past Timor Leste, there were also some neonates observed, which runs counter to the predictions of the timing hypothesis put forward in SC/69B/SH/08.

4. SOUTHERN HEMISPHERE RIGHT WHALES NOT THE SUBJECT OF CMPS

In 2016, the Committee agreed to commence gathering pre-assessment information (e.g., catch data, population abundance, structure, trend), to progress toward a regional In-depth Assessment of southern right whales (*Eubalaena australis*) (IWC, 2017, Item 10.8.1.5). In 2024, the Subcommittee was provided with updates on regional population trends, habitat use, and offshore distributions, which will inform the In-depth Assessment of the species across its range in the Southern Hemisphere.

4.1 General information

In 2020, the Committee encouraged the development of a global, standardised IWC-endorsed visual health assessment protocol for southern right whales (IWC, 2021) and in 2021, an Intersessional Correspondence Group (ICG) was formed. SC/69B/SH/02 presented an update on the work of this ICG. During the period 2023/2024, substantial progress was made updating the protocol and trialing the methods therein using the South African and Australian long-term, photo-ID datasets. Challenges were encountered during the analyses, mainly in relation to reaching moderate to high scorer agreement and limitations associated with the scoring framework. Considering the growing importance of having photogrammetry datasets that allow for quantitative assessments of body condition, the objectives of the visual health assessment protocol were reconsidered. Specifically, a population level (rather than individual level) health assessment was encouraged to document the baseline visual health indices and thereby facilitate comparison across SH regions, and for detection of changes over time. The protocol will be finalised and tested using a variety of available datasets across calving grounds for presentation at SC70.

The Subcommittee welcomed this report and thanked the members of the ICG for the work conducted. It **recommended** the continuation of the work of this ICG and cross-consultation with other relevant Subcommittees, such as CMP, PH and E.

Attention: SC, R

*The Subcommittee **recommends** the continuation of the ICG establish in 2021 and 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.*

4.2 New Zealand

No new primary papers on southern right whale research in New Zealand were received this year. However, the IWC-SORP reports outline a substantial amount of work undertaken in New Zealand under the auspices of IWC-SORP Theme 6 (SC/69B/SH/05 and SC/69B/SH/06). The Subcommittee **encouraged** the continuation of southern right whale research in New Zealand to understand 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. The Subcommittee looks forward to updates at SC70.

4.3 South Africa

SC/69B/SH/03 presented the results of the 2023 aerial surveys to monitor the South African population of southern right whales. With a total of 568 cow-calf pairs counted and photographed, this survey marked a record-breaking number of cows along the South African coast and demonstrated the continued, enormous annual fluctuation in southern right whale coastal prevalence in this region. The consistent low number of unaccompanied adults observed reconfirms altered migration patterns of this demographic group. The authors noted that the photo-ID data collected during this survey will be processed in the coming months.

The Subcommittee welcomed the update on the long-term monitoring of South African southern right whales, noted the longevity of the survey and **reiterated** the importance of these long-term data series for population assessment. The Subcommittee also noted the data continue the trend of extreme fluctuations in the coastal prevalence of cow-calf pairs along the South African coast since 2015. The possible effect of the high number of cow-calf pairs on the presence of unaccompanied adults in the region was discussed. The authors noted that such an impact is likely low, considering the continued low presence of unaccompanied adults regardless of the number of cow-calf pairs on the South African coast. In discussion, information was sought about the availability of funds for the continuation of this long-term monitoring work. Although there is no immediate threat to funding, there is ongoing work to assess the modelling outputs based on a spatially reduced dataset, to evaluate the possibility of reducing survey length in the future and thus the ongoing cost of fieldwork.

Germishuizen *et al.* (in review) described the results of an assessment of temporal variability in environmental variables (chlorophyll and sea ice concentrations) as proxies for Antarctic krill habitat quality in foraging grounds of the South African southern right whale population. Substantial reductions in sea ice and a significant increase in primary production metrics were found after 2009, environmental conditions believed to be less supportive of Antarctic krill recruitment. Considering the temporal alignment, these environmental changes are believed to be related to the demographic and migratory behaviour changes observed since 2010 in the South African right whale population. These findings highlight the vulnerability of recovering right whale populations to climate change and show how capital breeders serve as sentinels of ecosystem changes in regions that are difficult or costly to study.

The Subcommittee welcomed this information and noted the relevance of these results for the ongoing work of IWC-SORP Theme 6 on the effects of climate change on southern right whale demographics, as well as the Subcommittee on Ecosystem Modelling (EM). The lag between changing environmental variables and effects on calving success or coastal prevalence was discussed and noted to be difficult to assess given confounding factors such as changing calving intervals and mixing amongst the female cohorts in the population. Moreover, within the study there was a deliberate use of directly observed data rather than climate indices (such as, the El Niño-Southern Oscillation (ENSO) or Southern Annular Mode (SAM)) to avoid further confounding factors and to allow the evaluation of variables directly influencing prey availability. However, the potential role of climate indices as descriptors of large-scale climate states was recognised. The Subcommittee highlighted that there is much debate about the trends in Antarctic krill abundance. The critical importance of long-term annual datasets of southern right whale population dynamics for these types of analyses was reiterated.

4.4 Southwest Atlantic right whales

SC/69B/SH/09rev presented a multi-state analysis to assess dispersion rates of southern right whales between the Argentinian and Brazilian calving grounds. The analysis combined photo-ID data from the Southern Right Whale Programme (ICB – Ocean Alliance) in Argentina and from ProFRANCA (Instituto Australis) in Brazil, with catalogues consolidated up to 2017. The study estimated survival, site-specific recapture, and movement probabilities, while also testing biological hypotheses on movement probabilities. Dispersion rates between calving grounds were found to not be influenced by the number of whales in the area but were affected by breeding success. Preliminary findings suggest a larger rate of growth of the Brazilian population, likely driven by a gradual dispersion from the Argentinian population into the Brazil calving ground. Further work is planned that will take into account reproductive cycles in order to obtain more robust results.

The Subcommittee **commended** this highly collaborative work and highlighted its importance 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, the importance of increasing efforts to conduct multi-population level assessments for use in subsequent global assessment was noted. This report was further discussed by the Subcommittee for Conservation Management Plans (CMP) (Annex F, item 2.2).

4.5 Australian right whales

O'Shannessy *et al.* (in review) described trends in the relative abundance of Australian southern right whale populations over the period 1999-2022 and implications for management. The results showed that the recovery of

southern right whales is driving their return to past geographical ranges and biologically important areas. Specifically, southern right whales in the western population are redistributing from what was a key reproductive area into nearby historically important habitat as the population increases. The study also highlights the importance of suitable habitat, and connective migration corridors, as well as the increasing importance of management of smaller aggregation areas to enable continued recovery of southern right whales in Australia.

The Subcommittee welcomed the report, commended the authors for their analyses of multiple datasets and **recognised** the importance of this long-term monitoring to understand abundance trends and movement patterns, and to inform population models. The implications of southern right whale movements outside core areas for the implementation of management measures (e.g., vessel speed restrictions, exclusion zones) for the population were discussed and the importance of such scientific information for informing national and regional management decisions noted. The Subcommittee **encouraged** the continuation of the long-term monitoring to inform regional and global population assessments.

O'Shannessy *et al.* (2024) reported the key 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. The results indicated high inter-annual variation in long-term relative abundance trends, with the lowest counts of southern right whales recorded since 1993. While inter-annual variation in abundance is common at some sites, the low numbers recorded across the entire Australian population throughout the 2023 calving season were noted. A total of 21 females with calves and 63 unaccompanied adults were photo-identified across South Australia. Positive matches were found to national catalogues for 81% of females accompanied by a calf. Apparent mean calving intervals for 2023 were 4.2 years. The report noted that the high fluctuation in apparent mean calving intervals and low relative abundance is a cause for concern, and that analysis is underway to assess links between calf production, calving intervals, and climate variates, to be presented at SC70. The Australian Right Whale Research program outputs have directly contributed to the Australian Government's Draft National Recovery Plan for the southern right whale, defining Commonwealth Biologically Important Areas (BIAs), Marine Protected Area management and impact assessment for emerging threats and stressors.

The Subcommittee **commended** this research and noted that its continuation is essential for further population assessments. It was acknowledged that these long-term research programs rely heavily on support from traditional owners, local agencies and groups, universities and funders. The Subcommittee **strongly encouraged** the continuation of this long-term monitoring program, as well as the reconciliation of regional photo-ID catalogues, such as the Australasian Right Whale Photo-ID Catalogue (ARWPIC), which provide essential information for the assessment of regional and global populations.

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 Subcommittee **recommends** that long-term aerial and land-based surveys in Australia continue.*

At the request of this Subcommittee, the ASI Standing Working Group reviewed the abundance estimate derived for the Australian south-eastern southern right whale population by Stamation *et al.* in 2020. Upon review the ASG **commended** the work of the authors for providing an important first estimate for a small stock but **recommended** that for IWC assessment purposes the current analysis be categorised as **Not Suitable**. The ASI Standing Working Group welcomed the authors' plan to develop an improved analysis that it would be happy to review in the future if referred to it by the relevant convenor (Annex D).

SC/69B/SH/15 presented the results of southern right whale telemetry work off Australia. A total of seven transdermal satellite tags were deployed on adult southern right whales in 2023, and another seven in 2024, with average durations of 44 days and 156 days respectively. Resulting sinuous movements indicated likely foraging locations off the Crozet Islands, Kerguelen Islands, Antarctica, and the Subtropical Front. Future research will continue using state space modelling to investigate the use of oceanic features and to examine overlap among southern right whale populations.

The Subcommittee welcomed this paper and **reiterated** the importance of satellite telemetry studies for understanding offshore movement patterns and population connectivity, and the important application of telemetry data to the formation of catch allocation hypotheses.

Attention: SC, R

The Subcommittee **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.

4.6 Offshore areas

In 2020, the Scientific Committee formed an Intersessional Correspondence Group (ICG) to assess offshore southern right whale distribution using passive acoustic monitoring in the Southern Ocean (Item 8.2.3.4, IWC, 2021). The main goal of the ICG was to assess what southern right whale call data exists offshore and at high latitudes (including data from both Australia's Integrated Marine Observing System (IMOS) and the IWC-Southern Ocean Research Partnership's (IWC-SORP) Southern Ocean Hydrophone Network (SOHN)) and consider an appropriate analysis framework for using these data to assess southern right whale offshore distribution. This work relates to the current ongoing assessment of southern right whales on a global scale (IWC-SORP Theme 6), and the IWC-SORP Acoustic Trends Theme (Theme 5).

SC/69B/SH/13 provided an update on the work conducted during the intersessional period. During 2023/2024, the ICG met twice virtually, and progressed with the assembling of a training dataset for the development of automated detectors of southern right whale calls. Actions were identified to progress an assessment of trends in the acoustic presence of southern right whales, including: the finalisation of a training dataset, the development of an automated detector and the processing of existing datasets from potential southern right whale feeding grounds. Resources are required to perform the labour-intensive process of annotating a training dataset, that can subsequently be used to develop automated detectors.

The Subcommittee welcomed this paper, thanked the ICG for the progress to date and **encouraged** continued collaboration across IWC-SORP Themes and the broader Committee to further the work. In discussion, it was noted that through extensive telemetry studies on southern right whales in the past few years there is an improved knowledge of the offshore distribution of the species. It was therefore, **agreed** that the ICG should assess prioritisation of the development of a training dataset and automated detectors. Such detectors could then be used by different research groups to assess the presence of southern right whale calls in different existing Southern Ocean acoustic datasets. To better address this change in focus, Vermeulen stepped down as co-convenor of the ICG, and Shabangu agreed to co-convene alongside Schall going forward.

Attention: SC, R

The Subcommittee **agrees** to continue the southern right whale acoustics ICG.

The Subcommittee **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.

SC/69B/SH/12 presented a compilation of data on the contemporary occurrence and habitat use of southern right whales around the Crozet Islands, an historical Southern Ocean foraging ground, and identified data sources for further exploration. The data suggest a recolonisation of the Crozet Islands by right whales since the cessation of whaling and imply that this region should be regarded as an important contemporary mid-latitude foraging ground for the species, with known connections to the South African and Australian calving grounds.

The Subcommittee welcomed this new information and noted the importance of studying southern right whales on their foraging grounds where and when possible (e.g., Jackson *et al.*, 2020; Kennedy *et al.*, 2023) considering the observed changes in the species foraging ecology over past decades (e.g., van den Berg *et al.*, 2021; Derville *et al.*, 2023). In discussion, it was noted that no breeding behaviour has been observed in this area, but future observations are **encouraged** given the potential implications of population mixing in this region for the understanding of population connectivity. Conjecture over whether southern right whales sighted off Madagascar might represent the remnant of a subpopulation that historically foraged off the Crozet Islands was also noted.

Attention: SC, R

The Subcommittee **strongly 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 Subcommittee notes that other baleen whale species, including humpback whales, could also benefit from similar dedicated research efforts.

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. However, the efficacy of PAM methods relies on accurately interpreting acoustic signals. Southern right whale upcalls are commonly studied using PAM yet distinguishing them from humpback whale (*Megaptera novaeangliae*) vocalisations has until now been challenging.

Wöhle *et al.* (2023) investigated the acoustic presence of southern right whales off Elephant Island, Antarctica, using PAM data within which southern right whale upcalls have been identified. Collected vocalisations were compared to confirmed vocalisations of southern right whales from Argentina and humpback whales from the Atlantic Sector of the Southern Ocean. Differences in call features, particularly slope and bandwidth measurements, allowed successful attribution of the Elephant Island upcalls to southern right whales. This finding has enhanced understanding of southern right whale behaviour in Antarctic waters and will facilitate further research in this area.

The Subcommittee **thanked** the authors for their work and noted the importance of such long-term PAM datasets for the assessment of southern right whale presence, distribution and behaviour, as well as the importance of such methods for the analysis of archived and future acoustic datasets. The Subcommittee noted that a wider collaborative effort on southern right whale acoustic data is ongoing (e.g., within the ICG and the IWC SORP Acoustic Trends Working Group), and that annotated datasets are needed to efficiently progress this work. The initial focus of this collaborative effort will be acoustic data from Southern Ocean regions but the need for more southern right whale acoustic data on calving grounds in future was noted.

SC/69B/SAN/01 reported on visual and acoustic surveys of southern right whales and other baleen whales around the sub-Antarctic island at 54°15'S 36°45'W which were carried out between April and September in 2022 and 2023 as part of a two-year project investigating the abundance and density of krill and krill-feeding predators around the sub-Antarctic island at 54°15'S 36°45'W in the austral winter. Acoustic surveys using DiFAR sonobuoys were also conducted. Southern right whale sightings were made, photo-IDs collected and calls detected in both years. Analyses of this work are ongoing in order to relate observed distributions of whales to krill occurrence and density to inform management measures and updates were invited at SC70 (see also Annex N).

4.7 Progress on population assessment

SC/69B/SH/14 presented the preliminary demographic estimates for southern right whales off Australia by applying the photo-identification-based 'common' demographic model, and subsequently compared these estimates to demographic parameters for the South African population. During the presentation, the authors made note of the preliminary state of the current results (e.g., no confidence intervals are provided) and the low availability of adult female calving histories, and indicated that more photo-ID data analysis and further modelling work will be needed to obtain more robust estimates.

The Subcommittee welcomed the new information and **congratulated** the authors for the large amount of highly collaborative work undertaken. The Subcommittee **recommended** this work be continued and **reiterated** the importance of modelling population demographics in a comparative framework to enable species assessments across Southern Hemisphere wintering populations. The Subcommittee **encouraged** further work on photo-ID data reconciliation as well as application of the common model to an enhanced dataset to improve model outputs.

Attention: SC, R, CG

The Subcommittee **commends** this highly collaborative, multi-year effort. To progress population assessments of southern right whales the Subcommittee **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 Southern Hemisphere 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.*

In 2022, the Committee agreed to fund two workshops to review southern right whale catch series, stock structure and catch allocation. The first was held as a two-day pre-meeting to this meeting (SC69B). Its aim being to bring together a group of leading scientists and historians to conduct a review of available catch data and historical knowledge (Findlay, Vermeulen *et al.*). SC/69B/REP/05 provided a report of this pre-meeting, which details that as a first step, regional experts were identified to establish a working group (WG) with the main objectives to: 1) review the historic catch datasets produced at previous IWC meetings, 2) the compile these into the existing SRW catch series and 3) identify uncertainties and/or new available data to inform further revisions. A set of virtual meetings was held during which the WG was divided in regional sub-groups to progress with the work on a regional scale prior to the in-person meeting. These WGs reported their regional review and compilation of new information at the pre-meeting. Pre-meeting participants subsequently identified knowledge gaps in the current global southern right whale catch series, and recommendations were made on the next steps required to compile a revised catch series using the identified new data sources and revised approaches to conversions and struck and lost ratios.

The pre-meeting further agreed that there are two regions which have been used in prior assessments, where higher confidence in the catch datasets exists: West Pacific Ocean (Jackson *et al.* 2016) and Southwest Atlantic (Romero *et al.* 2022). The pre-meeting therefore proposed that these are advanced as a priority for regional In-depth Assessments. At the same time, the pre-meeting noted that certain areas may eventually be considered data deficient in robust regional catch datasets, and recommended that forward-projecting models be investigated where catch series deficiencies cannot be resolved.

Considering the need for further work (in some places extensive) to compile a robust and comprehensive southern right whale catch series, suggestions were made to change the intended aim of the second workshop/pre-meeting. This would entail delaying the aim to evaluate catch-allocation hypotheses across the Southern Hemisphere and instead prioritise the development of a catch series for the identified priority areas, and for forward-projecting models to be assessed. Additionally, to proceed with the work efficiently, an Intersessional Correspondence Group comprising southern right whale biologists, modellers and catch historians, was proposed.

The Subcommittee **thanked** the convenors and participants of this pre-meeting for the remarkable amount of work conducted to revise the existing southern right whale catch series. An ICG was established to ensure continuation of the revision process according to the priority actions identified during the pre-meeting. The need for ICG participants with relevant expertise in the revision of catch datasets and historical logbooks was highlighted and a funding proposal invited. Consideration was given to the establishment of a second ICG focussed on the development of forward-projecting population models considering the possible large uncertainty that would remain in several regional catch datasets. Discussion will continue intersessionally and be furthered at SC70.

5. OTHER

SC/69B/ASI/04 reported the outcomes of the fifth research cruise of the Japanese Abundance and Stock structure Surveys in the Antarctic (JASS-A). The 2023/24 JASS-A dedicated sighting survey was conducted in Area IV West (70°E-100°E; south of 60°S). Two dedicated sighting vessels were engaged in the survey based on the line transect method for 36 days in the research area. A total of 15 schools (18 individuals) of Antarctic blue whales were observed, 15 individual photo-IDs 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. In transit to the Antarctic research area, a total of four schools (five individuals) of southern right whales were observed off southwestern Australia (40°S-45°S), five individual photo-IDs, and four individual biopsy samples were collected. The data obtained will be analysed to provide abundance estimates and for stock structure studies at the Institute of Cetacean Research, Japan.

The authors were **congratulated** on the valuable contribution of data from this region, for the large number of photo-IDs and biopsy samples collected. The Subcommittee **encouraged** the continuation of these annual sightings surveys, and ongoing and new collaboration, in particular regarding the sharing of photo-ID data. The Subcommittee invited presentation of the results stemming from intersessional analyses of these samples at SC70.

SC/69B/SH/10 presented evidence of Antarctic minke whale (*Balaenoptera bonaerensis*) occurrence and migratory routes in the Southwest Atlantic Ocean. A total of 17 sightings of Antarctic minke whales were recorded, and most records were made in the continental slope in the period of June to December. Only one group with a calf was detected, in July 2017 at a latitude of 26°S. Six Antarctic minke whales were tagged (three males, one female and two individuals with unknown sex). The paper reported the first migratory movements documented for the Antarctic minke whale in the Atlantic Ocean. Although this is still a small sample, data show a probable migratory route parallel to the continent, following the slope, and suggest individual variability in migration timing and patterns.

It was noted that, although Antarctic minke whales are not currently a priority species for the Subcommittee, this is the first time an individual has been tagged outside a feeding area and the data are important for informing our understanding of movement, distribution, and behaviour. The Subcommittee **congratulated** the team on their success in sampling and tagging this species and **encouraged** them to explore collaborations with the wider Committee and IWC-SORP researchers to facilitate future work. Updates were invited at SC70.

SC/69B/EM/03 provides a description of CCAMLR’s Ecosystem Monitoring Programme (CEMP). A review of CEMP, exploring how the programme can inform the future CCAMLR revised krill fishery management approach, commenced in 2023 and included discussion of cetacean science. The current review of CEMP provides an opportunity for IWC and CCAMLR to further collaborate on developing advice on data, survey design, and subsequent analyses and syntheses, and to develop research networks to contribute to this work. An Intersessional Correspondence Group was formed by the EM Subcommittee to facilitate a collaboration between IWC and CCAMLR (Annex H, Agenda item 4.2 and Appendix 2) and an invitation was extended to members of the SH Subcommittee to participate.

The Subcommittee **welcomed** this timely and important initiative. It was noted that this would be an ongoing, two-way collaboration. The Subcommittee is able to provide expertise on, e.g., cetacean ecology and population status, the development of methods and technologies to improve the monitoring of cetacean populations, and to contribute data for use in the development of spatial modelling tools. CCAMLR is able to share with the IWC expertise on krill ecology and behaviour, habitat, and cetacean interactions with fishing vessels. Collaborative research opportunities on krill fishing vessels were also offered. Kelly was **thanked** for championing this initiative.

6. BUDGET

Six research proposals were received by the Subcommittee. They were assessed by two independent reviewers and ranked for relative importance by members of the Subcommittee. They can be found as documents SC/69B/RP/07, 08, 10, 12, 14 and 15.

7. WORKPLAN

Topic	Intersessional 2024/25	2025	Intersessional 2025/26	2026 Biannual meeting (SC/70)
7.1 Southern Hemisphere non-Antarctic blue whales				
Population assessment	Photo-ID matching the 2016 and 2017 SEPO data (Chile; Galletti). This item has financial implications for the Scientific Committee.	Finalise and hand over		Report
	Finalise meta data check for SEIO (Australian) data (Salgado-Kent)	Finalise and handover		
	Photo-ID matching of Timor Leste Data (Chile; Galletti). This item has financial implications for the Scientific Committee.		Finalise and handover	Report
	Generate abundance estimate by mark recapture analysis of SEPO (Chile) and SEIO (Australian, Fewster, Salgado-Kent) blue whale datasets	Report		
	Generate abundance estimate by mark recapture analysis of SEIO (Australia and Timor Leste) (Fewster) and SWPO (New Zealand). This item has financial implications for the Scientific Committee.		Conduct assessment	Report
Population structure	Conduct passive acoustic monitoring off the west coast of South Africa and off Durban, to inform catch allocation about Antarctic and SWIO Pygmy blue whale occurrence (Shabangu).		Data collection and analyses	Report

Topic	Intersessional 2024/25	2025	Intersessional 2025/26	2026 Biannual meeting (SC/70)
7.2 Southern right whales not subject to CMP*				
Population monitoring	Finalise the development and testing of a training dataset and an automated detection system for southern right whale calls (Schall and Shabangu)	Progress report	Continue workplan	Progress report
Population structure	Multi-state mark recapture and population dynamic analysis of Brazil-Argentina* photo-ID data to assess movement rates between regions (Agrelo and Cooke). This item has financial implications for the Scientific Committee	Progress report	Continue Workplan	Report
	Photo-identification matching between Uruguay with Brazil and Argentina catalogues (Groch)*	Progress report	Continue Workplan	Report
Progress towards in-depth assessment	Application of the common modelling framework on South African, Australian and South American datasets to assess southern right whale population parameters (Butterworth and Cooke).	Progress report	Continue Workplan	Report
	Review southern right whale catch series, to update regional catch estimates from IWC (2013) (Vermeulen and Findlay)	Workshop Report	Continue Workplan	Report
	Progress towards a spatiotemporal analysis of telemetry data on a global scale to inform population connectivity and investigation of foraging grounds and catch allocation hypothesis (Riekkola)		Continue Workplan	Report
	Development of a standardised health assessment protocol to assist a synoptic assessment of southern right whale health across calving grounds (Charlton and Vermeulen)	Progress report	Protocol development	Final report
7.3 Southern Hemisphere fin whales				
Population structure	Re-assess the use of available published and unpublished Discovery mark data on fin whales (Pastene, Jackson, Mizroch, Olson).	Report	Summarise Discovery Mark data held by Secretariat alongside literature information	Report
	Analyse fin whale song from recordings collected by Australian Antarctic Division in Australian, Antarctic and sub-Antarctic locations (Aulich).	Report		
	Analyse fin whale song from recordings collected off South Africa and Marion Island (Shabangu).	Report	Continue analyses	Report
	Working group to conduct inter-regional comparisons of Southern Hemisphere fin whale songs: compile existing analyses (Sirovic).	Report	Continue Working Group	Report
7.4 Southern Ocean Research Partnership (IWC-SORP)				
Analyses	Continued analysis of data/samples from previous IWC-SORP voyages/fieldwork	Report	Continued analysis of data/samples from previous IWC-SORP voyages/fieldwork	Report
Voyages	Baleen whale and krill research voyages on ships of opportunity along Western Antarctic Peninsula	Report	Baleen whale and krill research voyages on ships of opportunity along Western Antarctic Peninsula	Report
	ARA <i>Almirante Irizar</i> , 2024/25, to Antarctic Peninsula, Islas Shetland del Sur/ South Shetland Islands, Islas Orcadas del Sur/South Orkney Islands and Weddell Sea	Report	ARA <i>Almirante Irizar</i> and 2025/26, to Antarctic Peninsula, Islas Shetland del Sur/South Shetland Islands, Islas Orcadas del Sur/South Orkney Islands/Weddell Sea	Report
	RSV <i>Nuyina</i> , Krill and Krill Ecosystems (KaKE) voyage(s) to East Antarctica	Report	RSV <i>Nuyina</i> , Krill and Krill Ecosystems (KaKE) voyage(s) to East Antarctica	Report
Fieldwork	Continued fieldwork around sub-Antarctic Islands 2024-25	Report	Continued fieldwork around Sub-Antarctic Islands 2025/26	Report
Acoustics	Retrieval and redeployment of passive acoustic recorders on dedicated voyages and ships of opportunity 2024-26	Report	Retrieval and redeployment of passive acoustic recorders	Report
Funded research	Progress on IWC-SORP Research Fund funded research projects endorsed by IWC	Report	Progress on IWC-SORP Research Fund funded research projects endorsed by IWC	Report

*The Southwest Atlantic southern right whale population is subject to a CMP. This workplan is a CMP/SH joint initiative.

SH Interseasonal Correspondence Groups

SC Agenda Item/Sub-Committee	Type	Group (short name)	Terms of Reference	Members
SH	ICG	Southern right whale body condition	Finalise a global, standardised southern right whale body condition and visual health assessment protocol for IWC endorsement.	Charlton and Vermeulen (co-convenors), Arias, E. Bell, Christiansen, Dawson, Gregory, Hamilton, Horbst, Kent, Mitton, Moore, New, Olson, Rowles, Rowntree, Salgado Kent, Sironi, Uhart, Weir
SH	ICG	Southern right whale calls	Assess what southern right whale call data exists offshore and at high latitudes (including IMOS and SOHN data), and consider appropriate analysis framework for using these data to assess southern right whale offshore distribution.	Schall, Shabangu (co-convenors), Andrews-Goff, E. Bell, Buchan, Burkhardt, Calderan, Carroll, Galletti, McCauley, McPherson, Miller, Salgado Kent, Ward, Weinrich, Charlton, Friedlander, Leaper, McCauley, Širović, Webster
SH	ICG	Southern right whale catch data	Compile new SRW catch series and update regional catch estimates	Vermeulen, Findlay (co-convenors), Aguilar, Allison, Azizeh, E. Bell, Brito, Chatwin, Carroll, Double, Galletti, Katara, Mizroch, Morais, Romero, Ruiz-Sagales, Seyboth, Smith, Vieira, Weinrich, Zerbini
SH	ICG	Southern right whale modelling	Progress towards the application of a common modelling framework on long-term sighting history datasets from southern right whale calving grounds to assess common: (1) population dynamics patterns; and (2) environmental drivers	Charlton and Vermeulen (co-Convenors), Agrelo, Brandão, Butterworth, Carroll, Cooke, Dalla Rosa, Double, Groch, Leaper, Rayment, Ross-Gillespie, Rowntree, Sironi, Staniland, Watson
SH	ICG	Fin whale population structure	Conduct inter-regional comparisons of SH fin whale songs, similar to Širović et al. (2018) for blue whales.	Širović (Convenor), Aulich, Biuw, Buchen, Dréo, Harris, Isoda, Miller, Samaran, Shabangu, Van Opzeeland
SH	ICG	Opportunistic sighting data protocol	Review protocol for opportunistic sighting data collection.	Herr (Convenor), Babey, Biuw, Burkhardt, Buss, Cheeseman, Dalla Rosa, Hevia, Iñiguez, Mizroch, Secchi, Torres-Florez, Viquerat, Waluda, Weinrich
SH	ICG	Summary of fin whale information	Provide summary of fin whale data, data gaps and data need for a future In-Depth assessment.	Herr (Convenor), Biuw, Harris, Miller, Mizroch

8. ADOPTION OF THE REPORT

The report was adopted at 18:27, 28 April 2024.

9. REFERENCES

- Attard, C. R. M., J. Sandoval-Castillo, A. R. Lang, B. G. Vernazzani, L. G. Torres, R. Baldwin, K. C. S. Jenner, P. C. Gill, C. L. K. Burton, A. Barceló, M. Sironi, M.-N. M. Jenner, M. G. Morrice, L. B. Beheregaray, and L. M. Möller. 2024. Global conservation genomics of blue whales calls into question subspecies taxonomy and refines knowledge of population structure. *Animal Conservation* doi: 10.1111/acv.12935.
- Baggett, L.M., Schoenbeck, C., Baumann-Pickering, S., Hildebrand, J.A., Melcón, M.L., Posdaljian, N., Reyes Reyes, M.V., Rice, A., Širović, A., Solsona-Berga, A., Trickey, J.S. and Iñiguez Bessega, M.A. 2024. Trends in cetacean occurrence from long-term passive acoustic monitoring near the South Shetland Islands/Islas Shetland del Sur. Paper SC/69B/SH/17 presented to the IWC Scientific Committee, April 2024, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].
- Barber, R., I. Sikora, and M. Nimak-Wood. 2016. Blue whales *Balaenoptera musculus* in offshore waters of Kenya. *African Journal of Marine Science* 38:279-284.
- Brandão, A., Ross-Gillespie, A., Charlton, C. and Butterworth, D.S. 2024. Preliminary demographic estimates for southern right whales off Australia using the common model and comparison to the South African population. Paper SC/69B/SH/14 presented to the IWC Scientific Committee, April 2024, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].
- Branch, T. A., C. C. Monnahan, E. C. Leroy, F. W. Shabangu, A. Širović, S. Al Harthi, C. Allison, N. Balcázar-Cabrera, D. R. Barlow, S. V. Calderan, S. Cerchio, M. C. Double, R. Dréo, A. N. Gavrilov, J. Gedamke, K. B. Hodge, K. C. S. Jenner, M. N.-M. Jenner, I. S. Letsheleha, R. D. McCauley, J. L. Miksis-Olds, B. S. Miller, D. Panicker, C. Pierpoint, Z. R. Rand, T. Rogers, J.-Y. Royer, F. Samaran, K. M. Stafford, K. Thomisch, L. G. Torres, M. Torterotot, J. S. Tripovich, V. E. Warren, A. Willson, and M. S. Willson. 2023. Further revisions to the historical catch separation of pygmy blue whale populations using contemporary song detections. Paper SC/69A/SH/09 presented to the IWC Scientific Committee, April 2023, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].
- Carroll, E.L., Alderman, R., Bannister, J.L., Bérube, M., Best, P.B., Boren, L., Baker, C.S. et al. 2019. Incorporating non-equilibrium dynamics into demographic history inferences of a migratory marine species. *Heredity* 122: 53-68.
- Cerchio, S., Laran, S., Andrianarivelo, N., Saloma, A., Andrianantenaina, B., Van Canneyt, O. and Rasoloarijao, T. 2022. Cetacean species diversity in Malagasy waters. *The New Natural History of Madagascar* 15:411-23.
- Cerchio, S., Rasoloarijao, T., Sackett, M., Mueller-Brennan, L.M. and Cholewiak, D. 2024. Migratory movements and acoustic activity of blue whales (*Balaenoptera musculus*) and fin whales (*Balaenoptera physalus*) in the eastern Mozambique Channel. Paper SC/69B/SH/18 presented to the IWC Scientific Committee, April 2024, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].

- Double, M. C., V. Andrews-Goff, K. C. S. Jenner, M.-N. Jenner, S. M. Laverick, T. A. Branch, and N. J. Gales. 2014. Migratory movements of pygmy blue whales (*Balaenoptera musculus brevicauda*) between Australia and Indonesia as revealed by satellite telemetry. *PLoS One* 9:e93578.
- Galletti Vernazzani, B., J. A. Jackson, E. Cabrera, C. A. Carlson, and R. L. Brownell Jr. 2017. Estimates of abundance and trends of Chilean blue whales off Isla de Chiloé, Chile. *PLoS One* 12:e0168646.
- Germishuizen, M., Vichi, M. and Vermuelen, E. In review. Population changes in a Southern Ocean capital breeder point towards regional Antarctic sea ice declines. *Sci. Rep.* 20pp.
- Hörbst, S., Vermeulen, E. and Moloney, C.L. 2019. Visual health assessment of parous female southern right whales (*Eubalaena australis*) off the southern Cape coast, South Africa. Paper SC/68A/SH/13 presented to the IWC Scientific Committee, May 202, Virtual meeting (unpublished). [Paper available from the Office of this Journal].
- Liyanage U. S. P. Kirumbara, Jayasinghe R. P. P. Krishantha, Krakstad Jens-Otto, Arulananthan Kanapathipillai. 2022. Distribution and Abundance of the Blue Whale (*Balaenoptera musculus indica*) off Sri Lanka during the Southwest Monsoon 2018. *Journal of Marine Science and Engineering* 10(1): 1626
- International Whaling Commission. 2021. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)* 22: 1-90.
- Isoda, T., Yoshida, H., Yoshimura, I., Kim, Y., Moraga, C.A., Ueta, E., Higashi, M., Kawajiri, K., Ohkoshi, C., Abe, K. and Matsuoka, K. Results of the Japanese Abundance and Stock structure Survey in the Antarctic (JASS-A) during the 2023/2024 austral summer season. Paper SC/69B/SH/04 presented to the IWC Scientific Committee, April 2024, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].
- Jackson, J.A., Carroll, E.L., Smith, T.D., Zerbini, A.N., Patenaude, N.J. and Baker, C.S. 2016. An integrated approach to historical population assessment of the great whales: case of the New Zealand southern right whale. *R. Soc. Open Sci.* 3:150669. <http://doi.org/10.1098/rsos.150669>
- Maury, M.F. 1851. Whale chart. in Lt: Leigh. Herndon and Fleming and Pd Midn Jackson ed. Series F. National Observatory by Authority of COMMO L. Warrington (Chief Bureau of Ordnance and Hydrography).
- O'Shannessy, B., Möller, L., McCauley, R.D., Parra, G.J., N., J., Smith, J.N., Burnell, S. and Charlton, C.M. Submitted. Trends in the relative abundance (1992–2022) of southern right whales (*Eubalaena australis*) in key reproductive areas in South Australia: implications for management of the Australian population. *Marine Mammal Science*. SC/69B/ForInfo/26.
- O'Shannessy, B., Charlton, C., Gilmore, W., Evans, E. and McCauley, R. 2023. Australian Right Whale Research Annual Field Report - long term research of southern right whale in primary calving grounds. SC/69B/ForInfo/32.
- Pettis, H.M., Rolland, R.M., Hamilton, P.K., Brault, S., Knowlton, A.R. and Kraus, S.D. 2004. Visual health assessment of North Atlantic right whales (*Eubalaena glacialis*) using photographs. *Canadian Journal of Zoology* 82: 8-19.
- Richards, R. 1990. The commercial exploitation of sea mammals at Isles Crozet and Prince Edward Islands before 1850. *Polar Monograph* 1 [Available from: Scott Polar Research Institute Cambridge].
- Romero, M.A., Coscarella, M.A., Adams, G.D., Pedraza, J.C., González, R.A. and Crespo, E.A. 2022. Historical reconstruction of the population dynamics of southern right whales in the southwestern Atlantic Ocean. *Sci Rep.* 12(1):3324. doi: 10.1038/s41598-022-07370-6
- Rosenbaum, H.C., Razafindrakoto, Y., Vahoavy, J. and Pomilla, C. 2001. A note on recent sightings of southern right whales (*Eubalaena australis*) along the east coast of Madagascar. *Journal of Cetacean Research and Management* 2: 177-180.
- Sambrook J, Fntsch EF, Mamaris T (1989) Molecular Cloning a Laboratory Manual, 2nd ed. Cold Spring Harbour. Sprogis, K.R., Harcourt, R., Riekkola, L., Andrews-Goff, V., Vermeulen, E., Zerbini, A., Kennedy, A.S., Gales, N. and Carroll, E.L. 2023. Investigating Western Australian southern right whale foraging grounds through satellite telemetry. Paper SC/69A/SH/02 presented to the IWC Scientific Committee, April 2023, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].
- Stafford, K. M., G. Boussarie, M. Caputo, L. Irvine, S. Laing, E. V. Nancy, H. Pearson, and J. J. Kiszka. 2023. Acoustic detections and sightings of blue whales (*Balaenoptera musculus*) in the Seychelles, western tropical Indian Ocean (2020-2022). *Endangered Species Research* 52:203-208.
- Stamation, K., Watson, M., Moloney, P., Charlton, C. and Bannister, J. 2020. Population estimate and rate of increase of southern right whales, *Eubalaena australis* in south-eastern Australia. *Endangered Species Research* 41: 373-383.
- Tormosov, D., Mikhailiev, Y., Best, P., Zemsky, V., Sekiguchi, K. and Brownell, Jr. R. 1998. Soviet catches of southern right whales *Eubalaena australis*, 1951–1971. Biological data and conservation implications. *Biological Conservation* 86:185-197.
- Townsend, C.H. 1935. The distribution of certain whales as shown by logbook records of American whalships. *Zoologica* 19:1–50 plus maps.
- Vermeulen, E., Tixier, P., Carroll, E.L., Cerchio, S., Collins, T., Gasco, N., Germishuizen, M., Guinet, C., Harcourt, R., Houegnigan, L., Kennedy, A., Samaran, F., Zerbini, A.N. and Sprogis, K.R. Multi-method observations suggest recolonization of the Crozet Islands by southern right whales with links to different coastal calving grounds. Paper SC/69B/SH/12 presented to the IWC Scientific Committee, April 2024, Bled, Slovenia (unpublished). [Paper available from the Office of this Journal].
- Wöhle, S., Burkhardt, E., van Opzeeland, I., Schall, E. 2023. Exploring and verifying the acoustic presence of southern right whales (*Eubalaena australis*) off Elephant Island, Antarctica. *Journal of the Acoustical Society of America* 153: 3301-3311.

Appendix 1

Agenda

1. Introductory items
 - 1.1 Convenor's opening remarks
 - 1.2 Election of Chairs
 - 1.3 Appointment of rapporteurs
 - 1.4 Adoption of agenda
 - 1.5 Review of documents
2. IWC-Southern Ocean Research Partnership
3. Assessment of Southern Hemisphere blue whales
 - 3.1. Population structure
 - 3.2. Acoustic studies
 - 3.3. Pygmy-type blue whales
 - 3.3.1 Southeast Indian Ocean blue whales
 - 3.3.2 South West Indian Ocean
 - 3.3.3 Central Indian Ocean
 - 3.4 Progress on population assessment
4. Southern Hemisphere right whales not subject to CMP
 - 4.1 General information
 - 4.2 Review new information
 - 4.2.1 New Zealand right whales
 - 4.2.2 South Africa right whales
 - 4.2.3 Southwest Atlantic right whales
 - 4.2.4 Australian right whales
 - 4.2.5 Offshore areas
 - 4.3 Progress on population assessment
5. Other
6. Budget
7. Work plan
 - 7.1 Blue whales
 - 7.2 Southern right whales
 - 7.3 Fin whales
 - 7.4 Humpback whales
 - 7.5 IWC-SORP
8. Adoption of the Report