Commission for the Conservation of
Southern Bluefin Tuna

みなみまぐろ保存委員会

Report of
The Fourteenth Meeting of the Ecologically Related Species Working Group

21 – 25 March 2022

Online

Fourteenth Meeting of the Ecologically Related Species Working Group

21-25 March 2022

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Agenda Item 1. Opening

1. The independent Chair of the Ecologically Related Species Working Group (ERSWG), Mr Alexander Morison, welcomed participants and opened the meeting. The Chair advised that the meeting this year is being held as a video conference (VC) due to the COVID-19 pandemic, and that discussion for some agenda items had commenced in advance of the meeting by correspondence. The Chair thanked participants for their cooperation with this special arrangement.
2. Members and observers introduced the key speakers of their delegations to the meeting. It was noted that the European Union had advised prior to the meeting that it would not be attending the meeting and South Africa did not attend. The list of participants is shown at **Attachment 1**.

1.1 Adoption of agenda

3. The agenda was adopted and is provided at **Attachment 2**.

1.2 Adoption of Documents List

4. The adopted list of documents for the meeting is shown at **Attachment 3**. The Chair noted that some documents were submitted after the due date for the meeting. The ERSWG agreed to accept these late documents.
5. The Chair thanked participants for developing and submitting documents to the meeting. In particular, the Chair expressed appreciation to ACAP[1] and BirdLife International (BirdLife) for providing documents requested by the Secretariat.

1.3. Appointment of Rapporteurs

6. Australia and New Zealand volunteered to rapporteur agenda items 3, 4, 5 and 6. The Secretariat rapporteured the remainder of the meeting.

Agenda Item 2. Annual Reports

2.1. Members

7. Neither the European Union (EU) nor South Africa submitted an annual report to the ERSWG.

[1] Agreement on the Conservation of Albatrosses and Petrels

8. Discussion for this agenda item involved numerous questions and answers and commenced by correspondence in advance of the meeting. A summary of important responses from Members is provided below.

Australia:

- After footage from Australia's Electronic Monitoring (EM) system has been analysed, operators receive individual reports on their accuracy of reporting to encourage improved logbook reporting.
- Seabird interactions are rare events and can occur outside the 10% footage reviewed or may not be observed by the EM analyst because the camera was not positioned appropriately. In recent seasons the Australian Fisheries Management Authority has been working to improve camera angles to provide more extensive coverage.
- EM can be used to verify all three approved mitigation measure types however it does require the correct placement of cameras especially for Bird Scaring Lines (BSL) and Weighted Lines (WT).
- Seal predation on recreationally caught SBT is known to occur however this predation appears to be confined to areas in southern Tasmania and interaction rates have not been reliably quantified.
- In some cases, EM was not able to determine the fate of an individual.
- Measures have been introduced to improve the quality of seabird identification in its longline fisheries. This includes a requirement to collect feathers in a specified manner with a feather sampling kit and holding the seabird in close view of an EM camera in a series of specified positions. All interactions with seabirds, marine mammals, and turtles captured on EM in Australia's tuna longline fisheries are reviewed to assess species reporting accuracy, and resulting data are retained in a database for future reference.

Indonesia:

- Several trips from observers funded by the Directorate General of Capture Fisheries are still being validated by scientists from the Research Center of Fisheries Management and Conservation.
- Work is underway in an attempt to increase the observer coverage to 5% in collaborations with the Association through a fisheries improvement project (FIP).

Japan:

- The COVID-19 pandemic has affected placement of observers onboard fishing vessels since the 2020 fishing season.
- The corrective actions reported to the Compliance Committee (CC) is part of a consultation process with the fishermen, in order to ensure compliance with seabird measures. In this process, the Fisheries Agency of Japan (FAJ) conducts a briefing for the fishermen to explain the current implementation of seabird mitigation measures, and instructs them with educational material, on how to improve the implementation. These corrective actions are believed to be effective and will be continued.
- The possibility of spatial sampling bias due to low observer coverage was considered as a possible cause of the drop in observed seabird captures between 2019 and 2020. However, it is also possible that the improved implementation rate of bycatch mitigation measures led to a reduction in the

bycatch numbers, because the area of operation also included highly dense seabird areas.

- Fishing vessels which were judged to have used BSL as the only mitigation measure might have misunderstood the specifications of night setting. These fishers assumed that all hooks could be categorised as night setting if the first hook was deployed before sunrise. The FAJ continues to explain the correct specification of night setting to fishers to help prevent this misunderstanding.

Korea:

- Due to the COVID-19 pandemic observers were not placed onboard Korean longline vessels targeting SBT in 2020. Korea is planning to re-implement the scientific observer program for vessels targeting SBT during 2022.

New Zealand:

- Observers collect information on handling practices of sharks and whether sharks are released with or without hooks attached. While a formal analysis has not been conducted of this data, there are trends that emerge through casual inspection of the information. In general, smaller sharks have hooks removed by hand while larger shark's hooks are cut off at the snood.
- None of the EM pilot projects conducted to date have involved the surface longline fleet that targets tuna species such as southern bluefin. The limited nature of the trials conducted in other fisheries was also not conducive to testing the impact of EM on reporting in logbooks.

Taiwan:

- Taiwan advised that it will present to ERSWG 15, the results of its studies with Southern Bluefin Tuna targeting vessels on the effectiveness of combined mitigation measures, such as use of tori line, weighted branch-lines, and night time setting.
- Taiwan has not noted an increase in turtle interactions with its fleet in Area 5.

9. Japan submitted paper CCSBT-ERS/2203/BGD 02 which summarised results of Japanese scientific observer program for SBT in 2018. Scientific observers were dispatched on seven vessels that operated in the main CCSBT Statistical Areas (Areas 4－9). Observer coverage was 8.1% in terms of the number of vessels, 6.4% in terms of the number of hooks used, and 6.1% in terms of the number of SBT caught. The length frequency distributions of SBT reported by the observers and those reported from all vessels in the Real Time Monitoring Program (RTMP) were generally consistent with each other. Observers collected various types of biological samples including otoliths from 126 SBT and muscle tissue from 123 SBT. Observers retrieved CCSBT conventional tags from eight individual SBT.

10. Japan submitted paper CCSBT-ERS/2203/BGD 03 which summarised activities of Japanese scientific observer program for SBT in 2019. Scientific observers were dispatched on 20 vessels that operated in the main CCSBT Statistical Areas (Areas 4－9). Observer coverages were 23.0% in terms of the number of vessels, 22.0% in terms of the number of hooks used, and 18.0% in terms of the number of SBT caught. When taking the actual observation time during hauling into account, the coverage in the number of hooks observed was estimated as 17.6%. The length frequency distributions of SBT reported by the observers and those reported by all vessels in RTMP were generally consistent with each

other. Observers collected various biological samples, including otoliths from 246 SBT and muscle tissue from 289 SBT. Observers retrieved CCSBT conventional tags from three SBT individuals.

11. Japan submitted paper CCSBT-ERS/2203/BGD 04 which summarised activities of Japanese scientific observer program for SBT in 2020. Scientific observers were dispatched in five vessels that operated in the main CCSBT Statistical Areas (areas 4－9). Observer coverages were 6.4% in the number of vessels, 10.4% in the number of hooks used, and 6.4% in the number of SBT caught. When considering the actual observation time during hauling, the coverage in the number of hooks observed was estimated as 7.4%. The main reason for the low coverage rate was that the planned distribution of observers was not possible due to the worldwide spread of the COVID-19 infection. The length frequency distributions of SBT reported by the observers and those reported by all vessels in RTMP were generally consistent with each other. Observers retrieved CCSBT conventional tags from two SBT individuals.

12. The Chair thanked Members for provision of their reports and also noted that the pre-meeting discussion process allows more time for considered responses to questions.

13. It was noted that Japan's paper CCSBT-ERS/1703/26 (Rev.1) to ERSWG 12 explored the relationship between timing of sets in relation to sunrise and sunset against the CPUE of target species and bycatch of seabirds. It was suggested that this paper was relevant for discussion on mitigation later in this meeting.

14. The meeting agreed that for future national reports to the ERSWG, the table for reporting estimates of total ERS mortality should include both the FAO 3 alpha species code and the species/species group name.

2.2. Secretariat report on the ERSWG Data Exchange

15. Discussion for this agenda item commenced by correspondence in advance of the ERSWG meeting.

16. The Secretariat submitted paper CCSBT-ERS/2203/04. In this paper, the Secretariat summarised data provided for the ERSWG Data Exchange (EDE) including the 2021 EDE with data provided for 2020. As tasked at ERSWG 10, the summaries were aggregated over Members and include observed and actual effort, observer coverage rate, observed mortalities and estimated total mortalities. Aggregation was also by year, CCSBT Statistical Area and species/species groups. Data were provided by all Members apart from the EU, which has no ERS data to report, and South Africa, which has not provided ERSWG data for the past two EDEs and is yet to provide data for 2019 and 2020.

17. Following consideration of the Secretariat's paper, the meeting agreed that for future ERSWG meetings:

- Tables should be added to the Secretariat's paper that include the rate of capture in addition to the number of observed captures in order to control for the varying effect of observer coverage.
- Table 5 of the paper should be expanded to include Statistical Areas 4 and 14.

18. The meeting discussed the importance of moving to species level reporting over time and the possibility of renaming the "Giant petrels" species group in the EDE to "Large petrels". Giant petrels would then become a subset of the "Large petrels" group. The meeting noted that these matters would be better discussed as potential actions in the multi-year seabird strategy and discussion was deferred to that agenda item.

19. The Secretariat submitted paper CCSBT-ERS/2203/05, which provided information and correspondence from the CC that is relevant to the ERSWG. The paper contained four items of information:

- Extract of relevant ERS paragraphs from CC 16. This extract included a summary of the Secretariat's annual report to the CC on Members' implementation of ERS measures and performance with respect to ERS (CCSBT-CC/2110/05) which has been submitted to this meeting as CCSBT-ERS/2203/BGD01. The paper also acknowledged revised data recently provided by Japan that showed an increased use of mitigation measures by Japan in 2020 above that reported in CCSBT-CC/2110/05.
- Members' responses to the question raised at the CC of whether reports of night setting mean the entire set was conducted at night.
- Possible changes to CCSBT's High-level Code of Practice for Scientific Data Verification, to include cross-verification of different sources of mitigation data such as observer, electronic monitoring and logbook data.
- Information provided in Members' annual reports to the CC on the Types of Information Collected on Bycatch Mitigation Measures.

20. There was discussion of the reporting of night setting, noting that Members use a different definition of night sets in their reporting of night setting to the CCSBT EDE. No conclusion was reached on a uniform method for defining night sets for EDE reporting purposes.

21. The meeting considered the changes proposed in paper CCSBT-ERS/2203/05 to the High-Level Code of Practice for Scientific Data Verification to include cross-verification of different sources of mitigation data such as observer and logbook data. There was no consensus to the proposal.

Agenda Item 3. Reports of meetings and/or outcomes of other organisations relevant to the ERS Working Group

22. The meeting noted the report of the 1st Joint Tuna RFMO (tRFMO) Bycatch Working Group Meeting (held in Porto, Portugal from 16-18 December 2019) that was provided in paper CCSBT-ERS/2203/06. The meeting which had a focus on shark bycatch, discussed a range of fisheries issues such as bycatch mitigation, bycatch population estimates and threat assessment, bycatch science and data issues and the roles of industry and government in addressing bycatch issues. The meeting made 18 recommendations including considering the adoption of science-based management measures with setting and respecting reference points for by-catch species; developing incentives to reduce elasmobranch by-catch mortality, adopting the precautionary approach for all by-catch species; increasing observer coverage with electronic monitoring for

robust estimates of total by-catch. These had been considered by Members in the ERSWG 14 pre-meeting discussion. Australia noted the recommendation about RFMO engagement with CITES, and the likely new shark listings at the next CITES meeting. Members agreed that the tRFMO Bycatch Working Group recommendations should be taken into account in the context of later agenda items.

23. BirdLife presented three information papers (CCSBT-ERS/2203/Info 02; CCSBT-ERS/2203/Info 03; and CCSBT-ERS/2203/Info 09) which provided an update to their work since ERSWG 13. According to BirdLife's Information paper CCSBT-ERS/2203/Info 02, the Albatross Task Force has continued to successfully reduce seabird bycatch through education and the introduction of effective mitigation measures. Notable work includes a 98.4% reduction in seabird bycatch rates in the Namibian hake longline fishery since 2015 following the introduction of mandatory use of bird-scaring lines. In Taiwan, the RSPB (the UK BirdLife partner) has been working with the Taiwan Wild Bird Federation and the Taiwan Fisheries Agency, to improve the design of bird-scaring lines for large- and small-scale high seas vessels. Trials have been conducted on five tuna longline vessels fishing in both the Indian and Pacific Oceans since May 2021. Educational work through a social media campaign, 'Albatross Stories', has continued to raise public awareness of conservation issues facing albatross. In Japan, BirdLife has continued to build on engagement with the tuna supply chain. An in-person seminar was held in November 2019 and two webinars on seafood sustainability with a focus on bycatch were held in July 2021 and attended by tuna supply chain companies. BirdLife has also been collaborating with SeaBOS providing technical input to the development of their new Endangered Species Strategy and best practice advice for seabirds. The Global Seabird Tracking Database (est. 2003) continues to be managed by BirdLife and a new website for the database will be launched in 2022. BirdLife also led the analysis of seabird tracking data that led to the identification of the North Atlantic Current and Evlanov Sea-basin (NACES) MPA site, which was designated on 1st October 2021 by the OSPAR Convention.

24. Information paper CCSBT-ERS/2203/Info 03 informed the CCSBT ERSWG about the Seafood Business for Ocean Stewardship (SeaBOS) new Endangered Species Strategy which aims to improve knowledge and advance transparency in fisheries, whilst ensuring that existing and emerging practices aimed at reducing risks to endangered species and habitats, are more widely applied across all aspects of the seafood industry. The SeaBOS initiative is a unique cross-sector collaboration within the global seafood industry. It involves ten of the world's largest seafood companies representing over 10% of the world's seafood production and comprising over 600 subsidiary companies. Together with leading scientists across disciplines and universities, they explore transformative risks and opportunities for the global seafood industry and key impact areas. Given the large number of species defined as endangered, the Strategy initially focuses (2021-2023) on elasmobranchs and seabirds. Five time-bound goals are set out to substantially reduce the risk of harm to endangered species, followed by a stepwise approach to achieve the same. The first phase of the Strategy (2021-2023) will generate new knowledge and practice, contributing to mainstreaming existing approaches and ocean stewardship. The initial work with seabirds and elasmobranchs will provide an

opportunity to collaboratively develop and expand upon best practices for other endangered species. SeaBOS members working together with scientists will develop and pilot science-based solutions including evaluation of novel technologies that can help monitor the status of endangered species, mitigate negative impacts or incentivise compliance.

25. To support the achievement of time-bound goals detailed in the SeaBOS Endangered Species Strategy (CCSBT-ERS/2203/Info 03), SeaBOS have developed a set of science-based and operational best practices for reducing negative impacts on a number of endangered species (seabirds and elasmobranchs) (CCSBT-ERS/2203/Info 09). SeaBOS further emphasises the significance of monitoring, controls, and surveillance in demonstrating compliance with measures, identifying critical knowledge gaps, and addressing the same. Inadequate data on population sizes, breeding, feeding, and migration habitats, as well as associated temporal and spatial dynamics, are now regarded as knowledge gaps.

26. Members thanked BirdLife for the three papers and agreed that they would be considered as needed under later agenda items.

Agenda Item 4. Review of progress with the work program from ERSWG 13

27. The Chair advised that discussion of progress with the work program from ERSWG 13 took place by correspondence in advance of the meeting.

28. Members agreed to adopt the proposed template in Attachment B of paper CCSBT-ERS/2203/07 for summarising key points of ERSWG reports for provision to other tuna RFMOs.

29. It was noted that it would be beneficial if the ACAP Seabird Identification Guide could be translated into Indonesian and Members were supportive of this measure. ACAP agreed to provide partial funding for this effort.

30. Members noted the importance of the photos in the Seabird Identification Guide and expressed support for utilising the BMIS system as a potential host for this information. It was suggested to add an item to the Work Program to look at making use of BMIS as a seabird photo database for CCSBT.

31. In relation to a previous commitment to provide revised data, Australia indicated that they anticipate providing the data in the near future. They were unable to do so prior to ERSWG 14 due to domestic changes in their data systems. The data have been received and they are currently in the process of preparing the data submissions.

Agenda Item 5. Information and advice on ERS

5.1 Seabirds

5.1.1 Information on stock status

32. ACAP presented paper CCSBT-ERS/2203/16, an update on the conservation status of albatrosses and petrels and on ACAP's best practice advice on

reducing their bycatch in CCSBT longline fisheries. ACAP highlighted the serious conservation status of the large majority of the 25 species of albatrosses and large petrels that overlap with the CCBST. At its most recent assessment (September 2021) ACAP's Population and Conservation Status Working Group (PaCSWG) assessed that 11 were declining over the last 20 years, six were stable, two were unknown and six were increasing. Of ACAP's nine priority populations, seven overlap with the CCSBT area. One of these, the Antipodean Albatross, is declining at a rate of 12% per year.

33. ACAP noted that the most recent review of seabird bycatch mitigation measures and update of its best practice advice took place at the 12th meeting of ACAP's Advisory Committee, in August/September 2021. ACAP's best practice advice is based on regular reviews of research and a set of criteria. ACAP's recommended best practice is for a combination of weighted branch lines, Bird Scaring Lines and night-setting, OR the use of a hook-shielding device (the Hookpod-LED, Hookpod-mini or Smart Tuna Hook) OR an underwater bait-setting device (the Underwater Bait Setter – Skadia Technologies). Of these, two were added at the 2021 review (the Hookpod-mini and the Underwater Bait Setter). Recent guidelines endorsed by the ACAP Advisory Committee include data collection guidelines for observer programs and guidelines for electronic monitoring systems. These and other ACAP resources are available on the ACAP website: https://www.acap.aq/resources/bycatch-mitigation.

34. The meeting noted the good work undertaken by ACAP and its careful approach when considering new mitigation measures. Other mitigation methods include a mini hookpod, which has a high degree of efficacy, as well as an underwater bait setter, which is undergoing trials at the moment. Through innovation and the development of these mitigation measures, seabird bycatch can be dramatically reduced.

35. The ERSWG noted that ACAP has updated its advice concerning the most effective ways to reduce seabird bycatch in pelagic longline fisheries. This still includes the use of the following three best practice measures simultaneously: branch line weighting, night setting and bird scaring lines. In addition, the use of any of three assessed hook-shielding devices or the use of a newly assessed underwater bait setting device have now been recommended as suitable alternatives.

36. In response to a question, ACAP confirmed that no RFMO considers the smart hook a mitigation measure. To this point, Japan added that the Indian Ocean Tuna Commission (IOTC) did consider the smart hook device, but as it can only be used once it was not adopted as a mitigation device.

37. BirdLife presented paper CCSBT-ERS/2203/17 which analyses global threats to all 359 species of seabirds using the standardised threat classification scheme designed for the IUCN Red List. Bycatch in fisheries is the top marine threat, with invasive alien species the top terrestrial threat, and climate change/extreme weather being the third highest threat to the most species. Fisheries, particularly longline and trawl fisheries affect ~100 species, and the paper reiterates the importance of bycatch as a global threat to various seabird groups. Albatrosses (over 90% of species), petrels, shearwaters and penguins are the species groups most threatened by fisheries bycatch. Reducing the impact on populations from

the top three threats alone would benefit 2/3 of species, around 380 million individuals (about 45% of the global seabird population).

38. Bycatch of seabirds in longline fisheries includes mortalities and live captures (mainly during hauling). The proportion of birds that later die from injuries is unknown, and this cryptic mortality complicates efforts to quantify fisheries impacts to seabird populations. BirdLife presented paper CCSBT-ERS/2203/18 which detailed a study by the British Antarctic Survey over a 26-year period at South Georgia. The study used data from birds seen at the colony with embedded hooks or entangled with fishing line, and reports of ringed birds released from fishing vessels. The aims were to determine relative risk of live capture by species, to identify trends over time, and to determine post release survival rates. A foul-hooking index was used to account for population size– and rates were broadly similar in wandering albatrosses and giant petrels, an order of magnitude lower in black-browed albatrosses and nil in two other albatross species. Indices of bycatch rates peaked in the early-mid 2000s, then declined, broadly corresponding with changing fishing practices, including the lagged effect of a seasonal fisheries-closure, introduction of a new fishing system, reduced effort in and improvements in bycatch mitigation. Foul-hooking indices at colonies can therefore reflect relative risk for different species over time and be a useful adjunct to vessel-based monitoring of live-capture rates. Notably post-release survival of hooked birds was only 38% of expected, highlighting that mortality from hooking could be far higher than previously estimated. This has major implications for ecological risk assessments that seek to determine the impacts of fisheries on seabirds, as most do not currently consider deleterious impacts of live capture.

39. The ERSWG did not seek to amend its previous advice that the level of interaction between seabirds and SBT fisheries is still a significant level of concern.

40. BirdLife submitted paper CCSBT-ERS/2203/Info 04. Determining the drivers of movement of different life-history stages is crucial for understanding age-related changes in survival rates and, for marine top predators, the link between fisheries overlap and incidental mortality (bycatch), which is driving population declines in many taxa. In the paper, tracking data and a movement model was used to investigate the environmental drivers and conservation implications of divergent movement patterns in juveniles (fledglings) and adults of a threatened seabird, the white-chinned petrel (*Procellaria aequinoctialis*). The spatial distributions and movement characteristics of juvenile, breeding and non-breeding adult petrels were investigated using a mechanistic movement model to investigate the extent to which chlorophyll a concentrations (a proxy for food resources) and ocean surface winds drive their divergent distribution patterns, and how this influences conservation implications by determining the relative overlap of each life-history stage with fishing intensity and reported fishing effort (proxies for bycatch risk). Juveniles fledged with similar flight capabilities (based on distances travelled, flight speeds and track sinuosity) to adults but differed in their trajectories. Comparison of simulations from the mechanistic model with real tracks showed that juvenile movements are best predicted by prevailing wind patterns, whereas adults are attracted to food resources on the Patagonian Shelf. The juveniles initially dispersed to less productive oceanic waters than those used by adults, and over-lapped less with

fishing activity; however, as they moved westwards towards South America, bycatch risk increased substantially.

41. BirdLife submitted paper CCSBT-ERS/2203/Info 05. Many seabirds dive to forage, and this varies by species according to morphology, physiology, prey availability, and ambient light levels. Proficient divers are more able to seize sinking baits deployed by longline fishing vessels and may return them to the surface, increasing exposure of other species. Hence, diving ability has major implications for mitigating incidental mortality (bycatch) in fisheries. The paper investigates the diving behaviour and activity patterns of the most bycaught seabird species worldwide, the white-chinned petrel. Individual birds were tracked from Bird Island (South Georgia) and three data sources (dives, spatial movements, and immersion events) are combined to examine aspects of at-sea foraging behaviour, and their implications for alternative approaches to bycatch mitigation are considered. The tracked birds (n = 14) mostly performed shallow dives (<3 m deep) of very short duration (<5 s), predominantly during darkness, but only 7 and 10% of landings in daylight and darkness, respectively, involved diving, suggesting that surface-seizing is the preferred foraging technique. However, individuals were able to dive to considerable depth (max = 14.5 m) and at speed (max = 2.0 ms −1), underlining the importance of using heavy line-weighting to maximise hook sink rates, and bird-scaring lines (Tori lines) that extend for long distances behind vessels to protect hooks until beyond diving depths. The study reinforces the importance of compliance with the mitigation measures that have been adopted in RFMOs to minimise seabird bycatch.

42. BirdLife noted migratory marine species cross political borders and enter the high seas, where the lack of an effective global management framework for biodiversity leaves them vulnerable to threats. Paper CCSBT-ERS/2203/Info 06, submitted by BirdLife, combines 10,108 tracks from 5,775 individual seabirds at 87 sites to estimate the relative year-round importance of national jurisdictions and high seas areas for 39 species of albatrosses and large petrels. Populations from every country made extensive use of the high seas, indicating the stake each country has in the management of biodiversity in international waters. The researchers quantified the links among national populations of these threatened seabirds and the RFMOs which regulate fishing in the high seas. Fishing fleets operate in the high seas are under the jurisdiction of their flag states; therefore, although, some countries do not host albatrosses and large petrels within their national jurisdictions, some countries still affect them through their high seas fishing fleets. The study highlights the importance of national measures for albatrosses and large petrels coupled with coordinated, international efforts in successfully mitigating threats occurring across the ranges of these species.

43. Seabird population monitoring has revealed low survival of juveniles over recent decades, potentially because naïve individuals are more susceptible to bycatch than adults. However, major gaps remain in our knowledge of behaviour and interaction of juvenile seabirds with fisheries. In paper CCSBT-ERS/2203/Info 07, submitted by BirdLife, juvenile grey-headed albatrosses (*Thalassarche chrysostoma*) were tracked from South Georgia - the largest global population of this endangered species, and in rapid decline - to investigate their at-sea distribution and assess bycatch risk. Fledged juveniles

dispersed to the northeast, overlapping with a bycatch hotspot for grey-headed albatrosses previously reported by a fishery in the southeast Atlantic Ocean. Given adult grey-headed albatrosses use regions less exposed to fishing activity (< 40◦S), the majority of birds bycaught in this area are probably juveniles, and possibly immatures, from South Georgia, likely representing a key factor explaining the sustained population decline. This work highlights the urgent need for complete uptake of bycatch mitigation on longline fishing vessels to reduce the impacts on the vulnerable population of grey-headed albatross.

5.1.2 Estimates of ERS mortality and associated uncertainty

44. No papers were submitted, and no discussion was held for this agenda item.

5.1.3 Ecological risk assessment

45. New Zealand presented paper CCSBT-ERS/2203/12, which assessed interannual variability of Antipodean albatross distributions using tracking data gathered during the intersessional period as a response to comments made at ERWG13 around paper CCSBT-ERS/1905/15. Seabird distributions are particularly important in the application of spatial risk assessment approaches to inform management: seabird distributions and fishing effort data were combined to generate predictions of particular areas of high capture. Identification of these hotspots has been proposed as a tool for the spatial management of the surface-longline fishery in the CCSBT convention area.

46. A question was raised as to why the trend in overlap did not reflect the declining population of the Antipodean albatross. It was clarified that a different dataset was used compared to the previous analysis and this difference in input could explain the difference. New Zealand agreed that simulated data could be used to benchmark results moving forward.

47. It was suggested that there was some difference in overlap between years and that data should be grouped together for the final analysis.

48. It was further noted that some issues remained with the hotspot approach with some species having insufficient data to perform the analysis.

49. A question was raised as to where female Antipodean albatross overlapped with CCSBT effort. It was clarified that risk to particular demographics of Antipodean albatross would be assessed in the Multi-threat Risk Assessment (MTRA). The MTRA would assess risk from fishing effort, exposure to plastic and climate change.

50. Australia indicated that they would be interested in engaging with New Zealand on future Antipodean albatross work as part of the Antipodean Action Plan adopted under the Convention on Migratory Species in 2020.

51. It was noted that there is difficulty in speciating Diomedea albatross and that DNA analysis was needed to accurately attribute bycatch at the species level. New Zealand welcomed any additional bycatch information even if not at the species level.

52. A question was raised as to whether this methodology to assess the robustness of distributions could be used on other species. It was clarified that this methodology of assessing length of tracking data and resampling could be used on other species with sufficient tracking data.

53. It was noted that the requirement to use mitigation south of 25 degrees looked consistent with the tracking data and derived distributions presented for the Antipodean albatross.

54. New Zealand sought agreement that the level of tracking data and the subsequent analysis was sufficient to establish a robust estimate of distribution for use in a Hotspot analysis. No further questions were raised.

55. New Zealand presented paper CCSBT-ERS/2203/13, which presented the methodology and data inputs for the updated Southern Hemisphere Risk Assessment (SEFRA). This included a catalogue of the data to be used to derive the Population Sustainability Threshold of the 25 ACAP species. This update of the SEFRA will include fishing data from surface longline, bottom longline, trawl and squid jig. The previous iteration of the work considered surface longline only. New Zealand assured that results from the SEFRA would be provided to Members.

56. It was noted that the previous iteration of the SEFRA was a collaboration between New Zealand, Japan, Australia and South Africa, as well as between Japan and Taiwan. Japan and Australia indicated that collaboration should be continued with this round of SEFRA, in the areas of data contribution, model development and examination of model robustness. New Zealand welcomed the suggestion and will look for ways to facilitate this cooperation.

57. Clarification was sought on the differences between this SEFRA and previous iterations described in CCSBT-ERS/1905/17. In response, it was stated that this model used a monthly temporal resolution, as compared to the prior iteration's quarterly resolution. It was requested that the final outputs should include the result of a model run using the equivalent settings and/or data inputs as those used in the previous SEFRA version, so that it could distinguish between temporal changes in estimated risks and those resulting from differences in model settings and input data.

58. A question was raised about the impact of diverse bird biology, particularly time spent at the nest or nesting site, on risk estimation. It was clarified that the model, which is being run on monthly data, would account for different life stages, breeding status and time spent at the nesting location.

59. Questions were raised about how this exercise aligns to the global assessment of seabird bycatch by surface longlines, led by BirdLife as a part of the Common Ocean II project. Corresponding to the request for further clarification, it was explained that the Common Ocean II plans to repeat the similar analysis as the Common Ocean One. It was agreed that some clarification was needed on the level of intersessional collaboration around this project and that Members would collaborate more actively on this.

60. New Zealand sought a possibility of supplying observer data during the intersessional period to contribute to the SEFRA. Japan and Australia supported the suggestion but responded that conditions around data confidentiality will have to be established first. It was also agreed by Members that collaboration

should go beyond the provision of data and also include collaboration on the analysis.

61. The clarification was sought on how the Hotspot Analysis and Southern Hemisphere Risk Assessment relate to each other. It was noted that at ERSWG 12, Option 3A was agreed for defining High Risk Areas. This option looks to limit high risk areas to places where the most at-risk seabirds are at most risk from surface longline fishing. Further to this, at ERSWG 13 spatio-temporal overlap of seabirds and fishing effort, and fleet specific catchability mainly contributes determining the areas at high risk. These high-risk areas could either move dynamically with fishing effort or could have ecological drivers and be stable.

62. New Zealand noted that substantial tracking of one of the most at-risk seabirds was completed during the intersessional period. Analysis done under CCSBT-ERS/2203/12 showed stability of the Antipodean albatross over the 30 years of tracking. This would imply that fishing effort is the dynamic component in the hotspot analysis.

63. Paper CCSBT-ERS/2203/14 was submitted as an information paper.

5.1.4 Assessment and advice on mitigation measures

64. Japan presented paper CCSBT-ERS/2203/11, which assessed the effectiveness of seabird mitigation measures. The paper looks to examine the effectiveness of the mitigation measures, the seabird bycatch rate (BPUE) was standardised with the data in 2018-2020. The effort of observer data used in this study was spread roughly evenly from the Atlantic to the Pacific area. Because BPUE at hooks set at night or/and at a higher proportion of weighted branch line was tended to be lower, it is indicated that the combination of tori line and night setting and tori line and weighted branch line would effectively reduce seabird bycatch. Even during the daytime, BPUE at the proportion of over 80% of weighted branch line was tended to be lower. Because of insufficient data, this result is a preliminary and it is important to collect the data and further examination.

65. Clarification was sought around 2019 observer deployment being affected by the COVID-19 pandemic. Japan clarified that observer coverage decreased in 2019 uniformly across all areas, so even though less data was collected it is still representative of the fishery.

66. A question was raised around the non-significance of an effect for weighted branch lines, suggesting if the non-significance was because of the various types of weighted branch lines were all considered as WB. Japan replied that with more weighting there may be a significant effect in future analyses.

67. It was asked that mitigation standards have been in place for eight years and data presented shows only from 2018. It was clarified that data on the detailed arrangement of weighted branch lines among all baskets was only collected from 2018 onwards and that this study was comprehensive in regards to the data available.

68. Clarification was sought around Figure 2 in the presentation in regard to the percentage of branch lines that were not weighted and if this data could be

provided in a table. It was clarified that this data was provided through the data exchange and is presented in Table 2 of the annual report from Japan.

69. A question was raised as to what effect hotspot identification will have on required mitigation measures. It was noted that the purpose of this research was to assess the effectiveness of current mitigation measures south of 30 degrees. Japan's efforts to increase use of mitigation measures will focus on current regulations requiring the use of two out of three measures.

70. A Member sought further clarification around the reporting of weighted branch line use since 2018, stating that this data looks to have been reported by crew and indicates that there is a large proportion of fishing occurring during the day not using weighted branch lines. Clarification was provided that usage of weighted branch lines were increased in 2019. Improved distribution of gear to fishing vessels has improved usage for 2020 onwards.

71. Clarification was sought around the use of observer data to determine night setting. Japan noted that observer data is the best source of information on mitigation usage in its fleet.

72. It was noted that night setting and tori line usage can easily be defined, whereas there is variation in branch line setup. A question was raised about how the results on the effectiveness of branch line weighting could be affected by the method used to calculate the number of seabirds captured per basket.

73. Clarification was sought around the proportion of weighted hooks in a basket, and what percentage of hooks had to be weighted per basket to be reported as compliant use of line weighting. It was noted that the proportion of weighted hooks in a basket depends on the operation.

74. A Member sought further clarification around Table 2 in the country report. Data reported in Table 2 stated that during 2018 and 2019 nearly all effort occurring during the day used only a tori line which is not consistent with what was reported at ERSWG 13. In addition, information was sought on the amount of weight used in 2020 and how far this was from the hook to determine if this met the ACAP best practice standards.

75. Clarification was provided that the detailed arrangement of the weighted branch line among all branch lines was only recorded from 2018 onwards and that all weighting is according to the specifications on CMMs for each tRFMO.

76. A Member sought further clarification around the use of branch line weighting if setting occurred in both day and night. Clarification was provided that the weights are provided to the vessels from Fisheries Agency and industry, and it made use of weighted branch line improved. It was further noted that some vessels are already achieving 100% weighted branch line usage.

77. It was noted that the 2014 iteration of this analysis included the effect of various mitigation measures on the CPUE on SBT and that this would be useful to encourage adoption moving forward.

78. New Zealand presented paper CCSBT-ERS/2203/11 which assessed risk factors that influence the capture of protected species including seabirds, fur seals, sharks, and turtles by small surface-longline vessels to inform the development of potential mitigation strategies. There were insufficient observed captures of turtles, dolphins and whales, and protected sharks and rays to enable meaningful

analysis during 2006-07 to 2018-19 in the New Zealand domestic surface longline fleet.

79. Clarification was sought on turtle bycatch and whether species was recorded, and the effect that set location had on results. It was also clarified that height of attachment for tori lines could not be increased indefinitely to increase aerial extent.

80. It was noted that turtle bycatch during the time period of the analysis were numerous enough to inform the model, though in recent years more numerous captures have been observed and these could be used in future iterations of this analysis. It was further noted that area and year were controlled within the model.

81. A question was asked regarding the vessel freezer variable identified during the analysis and why this would lead to increased captures. It was noted that these vessels tended to go further offshore.

82. Clarification was sought about use of dyed baits and whether this was a significant variable in the analysis. It was noted that dyed baits did not show up as a significant variable in the analysis.

83. Clarification was sought regarding the variable indicating that the tori line was above the line entry point and whether this was above the back bone as indicated in the presentation or above the bait entry point. It was noted that one of the conclusions of the analysis was that more guidance needed to be provided to observers collecting this data as there was some ambiguity in regards to the exact definition of these variables and it could not be determined which interpretation was used.

84. The Humane Society International (HSI) provided paper CCSBT-ERS/2203/info 01, because CC 16 agreed (CC16 Meeting Report para 142, item 5) that Members were to advise the Secretariat ‘as soon as practical’, ‘on whether reports of night setting mean the entire set was conducted at night’. CCSBT Members have agreed to a widely recognised definition of night setting, and yet currently, line sets do not necessarily occur entirely in the day or night. The paper provided two recommendations aimed at assisting Members in better accounting for day/night straddling sets and mitigation practices. A clearer understanding of the proportion of day/night straddling sets of the SBT longline fishery is necessary for fishery data accuracy and subsequent reliability of data analysis. Current uncertainties of data from sets that straddle night/day may be causing incorrect assumptions about compliance levels, efficacy of mitigation measures, and obligations of Members. Rates of reported seabird mitigation noncompliance by some Members have remained consistently high, as indicated in CC16/2010/05 (Rev.1) and there are huge obstacles to reliable verification of compliance across roughly 90% of unobserved fishing effort. If night setting alone was deemed an acceptable single mitigation measure this would discourage night/day straddling sets which are likely to be reducing mitigation efficacy. Because the practice of setting hooks at night is alone a highly effective seabird mitigation measure, any proportion of a set made in darkness is preferable to none. Weighting of branchlines would be a desirable mitigation measure practice for vessels straddling night/day sets because that would be less onerous than changing to another mitigation measure type when going into

daylight. However weighted hooks set at night still offers superior seabird mitigation compared to weighted hooks together with BSL when day setting. It was noted that unless seabird interactions are correctly assigned against the mitigation practices actually in use, completely wrong conclusions about the effectiveness of mitigation measure combinations will be drawn.

*5.1.5 Use of new 5*5 by quarter data*

85. No papers were presented under this agenda item however New Zealand noted that the use of these data was reported in 5.1.3 and suggested that in future meetings these agenda items should be combined.

5.1.6 Seabird species identification

86. No papers were submitted on this agenda item

5.1.7 Multi-year seabird strategy

87. Australia presented the paper CCSBT-ERS/2203/10 concerning developing a multi-year seabird strategy. The paper provided an overview of the progress made in developing the seabird strategy, which has been under development since 2017, and follows on from the SMMTG[2] recommendations. The paper incorporates an overall objective and five specific objectives that the Extended Commission (EC) has agreed to, as well as draft content concerning guiding principles, specific actions, and implementation and evaluation. The paper builds on the proposals within CCSBT-ERS/1905/12, discussions at ERSWG 13 and includes intersessional feedback from ERSWG Members.

88. Some Members proposed revisiting the overall objective and the five specific objectives, but noting that the EC has agreed to these and the absence on a consensus for amending these aspects of the seabird strategy, the Chair proposed and Members agreed that ERSWG 14 should focus on the proposed specific actions within the strategy.

89. Japan proposed that Annex B to the seabird strategy be removed and the original SMMTG recommendations be attached instead (CCSBT-ERS/2203/Info 10). Australia proposed that if an attachment concerning the SMMTG recommendations were to be annexed to the seabird strategy; this should be the attachment to CCSBT-ERS/1905/05, which outlines the progress in implementing the SMMTG recommendations. The Chair noted that we have moved on from the SMMTG and the seabird strategy represents the next steps in implementing the SMMTG recommendations. The Chair proposed and Members agreed that the strategy should mention the earlier documents and provide a link to these.

90. Members recalled the relevant activity within the ERSWG work plan: Develop a revised draft list of strategic actions under each of the specific objectives of

[2] The Effectiveness of Seabird Mitigation Measures Technical Group.

the multi-year Seabird Strategy (CCSBT-ERS/2203/07 Rev 1) and agreed to focus on the specific actions within the seabird strategy.

91. Members discussed a range of draft actions concerning the seabird strategy and agreed to the actions outlined in **Attachment 4**. Members also agreed to the approach to implementation and evaluation of the Seabird Strategy. ERSWG proposed that the seabird strategy be implemented taking account of the General Principles of the *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea Convention of 10 December 1982 Relating to the Conservation and Management of Highly Migratory Fish Stocks and Straddling Fish Stocks* (UN Fish Stocks Agreement).

92. ERSWG agreed to implement the multi-year seabird strategy once approved, including through intersessional activities.

5.2 Sharks

93. The Chair noted that no papers had been submitted on this agenda item but opened the floor to Members for discussion

5.2.1 Information on stock status

94. The Chair noted that no papers were submitted on this agenda item and no discussion was held.

5.2.2 Estimates of ERS mortality and associated uncertainty

95. The Chair noted that no papers were submitted on this agenda item and asked Members to confirm whether they were comfortable repeating the agreed advice from ERSWG 13 on sharks, which is that there were no specific or additional concerns about shark bycatch which warranted action by ERSWG 14.

96. HSI noted that there were questions posed in the pre-meeting discussion document about sharks and noted the importance of those questions and responses by Members.

97. It was noted that some species of sharks have been nominated to CITES for consideration to be listed. It was suggested that CITES recommendations should be better incorporated into RFMOs, and that CCSBT should strive to improve engagement with the CITES Secretariat.

5.3 Other ERS

98. The Chair noted that no papers were submitted for this agenda item, but Members were invited to raise issues and encouraged to present information about the impacts of SBT fishing on other ERS species.

99. It was noted that in the pre-meeting discussion document, Australia had indicated that there were unquantified interactions with the recreational SBT fishery and fur seals in Tasmania, and a question was raised as to whether Australia has plans to better quantify the nature of these interactions. Given uncertainty by Australia regarding the status of relevant work on this issue being

undertaken by the State government, it was agreed that an update would be provided at the next ERSWG meeting.

100. There was a discussion regarding potential inclusion of the pre-meeting discussion document as an attachment to the report of ERSWG 14. It was agreed that this was not feasible as it was a lengthy and unpolished document and that instead, important points raised within it should be reflected in the body of the main report.

Agenda Item 6. Education and public relations activities

101. The Chair noted that discussion for this agenda item commenced by correspondence in advance of the ERSWG meeting.

102. BirdLife submitted paper CCSBT-ERS/2203/19 which provided an update on progress in developing the project for enhancing the implementation of Ecologically Related Species (ERS) seabird measures within CCSBT fisheries since CC 16. It includes recruitment of a project manager which is currently underway, and an overview of project plans for 2022.

103. BirdLife also submitted paper CCSBT-ERS/2203/BDG05, which is an update previously presented at CC 16. Since CC 15, progress had been made in developing the project for enhancing the implementation of ERS seabird measures within CCSBT fisheries. The Intersessional Seabird Working Group (SBWG) had been established and a draft project work plan had been developed by BirdLife and the CCSBT Secretariat, and comments from the SBWG were incorporated.

104. Considering both papers (CCSBT-ERS/2203/19 and CCSBT-ERS/2203/BGD 04) were reviewed in the pre-meeting discussion BirdLife did not present anything further and instead invited any further questions from Members.

105. A question was asked to clarify whether there was a need for further funding sources. It was noted that the funding from FAO was confirmed and covers the time of the project coordinator. BirdLife will be providing in-kind supports and expert supports for local workshops. It was also confirmed that it would be unlikely for there to be a significant amount of further costs and it is anticipated that there will not be a need to find additional sources of funding.

Agenda Item 7. Consideration of recommendations from the Performance Review of the CCSBT

106. The Chair advised that the October 2021 meeting of the EC requested subsidiary bodies to consider any pertinent recommendations made by the performance review panel in its final report and provide advice to CCSBT 29 on recommendations relating to them. The full report of the 2021 CCSBT Performance Review was provided to this meeting as paper CCSBT-ERC/2203/09.

107. The Secretariat submitted paper CCSBT-ERS/2203/08, which provided an extract of 37 performance review recommendations that were at least partially

related to ERS. To assist consideration of these recommendations, each Member completed a template in advance of the ERSWG meeting that, for each recommendation:

- Specified whether the Member considered it to be an appropriate recommendation for the ERSWG to consider (i.e., within the ERSWG's scope);
- Prioritised the recommendation (low, medium, high) from that Members' perspective;
- Indicated the level of action (no action required, continue current level of activity, or new action required) that the Member considered to be necessary to implement the recommendation;
- Specified which CCSBT body the Member considered should take the lead for implementing the recommendation; and
- Specified any pertinent comments relating to the recommendation.

108. There was considerable variation of views between Members in relation to these aspects of each recommendation. In order to provide some initial advice to the EC in the limited time available to the ERSWG, it was agreed to use the following criteria to help identify the recommendations that are most important from the ERSWG's perspective:

- At least half the Members view the recommendation as appropriate for the ERSWG to consider;
- At least half the Members consider the recommendation to be a medium or high priority;
- Some new actions were considered to be necessary to implement the recommendation; and
- At least half the Members considered the ERSWG should take the lead in implementing the recommendation.

109. From this analysis, the following seven recommendations were considered as being most important from the ERSWG's perspective, noting that even with these recommendations, there were some differences of views between Members:

- PR2021-6 - *Consider the feasibility of a collaborative programme (between RFMOs and institutions with competency in biodiversity conservation) to forecast the likely impacts of climate change on tuna ecosystems, SBT, ERS, and their productivity, distribution, and resilience*;
- PR2021-8 - *Conduct capacity building programs to improve data collection and reporting, in particular in developing countries*;
- PR2021-11 - *Establish mechanisms to improve consistency and avoid ambiguity in national reports*;
- PR2021-20 - *Establish a clear and concise bycatch policy and management strategy*;
- PR2021-27 - *Strengthen the implementation of current measures to reduce bycatch, particularly of seabirds, and explore the potential for an incentivised mechanism to combat an increase in bycatch and address the impact of fisheries on living marine resources and the ecosystem*;

- PR2021-30 - *Identify and analyse compatibility issues and risks associated with adopting resolutions from other RFMOs, especially in monitoring, compliance, and surveillance for ERS, and develop mitigation measures and strategies*; and
- PR2021-54 - *Review the reporting templates periodically*.

Agenda Item 8. How to improve the CCSBT's focus on seabird bycatch

110. The EC requested that the ERSWG consider the need for annual meetings and provide advice to the EC on how CCSBT's focus on ERS can be improved, particularly on seabird bycatch.

111. It was noted that the three-year gap since the last ERSWG meeting had contributed to a loss of momentum in the ERSWG's progress and that more frequent meetings were required. Some Members also considered that the past process of having meetings every second year was not sufficient. However, many Members were of the view that full ERSWG meetings each year would place too much burden on Member scientists.

112. Following substantial discussion, it was agreed to have a hybrid approach for future ERSWG meetings. This involves having a full, face-to-face ERSWG meeting every second year and a scientific technical meeting in the intersessional years.

113. It was agreed that national reports would only be submitted by Members to the full meetings of the ERSWG every second year. The intersessional meetings would usually be held virtually and would focus on specific technical priorities agreed by the Members. These priorities might change from meeting to meeting, but there could also be some elements of the intersessional meetings, such as monitoring observer coverage and seabird mortalities from the annual EDE data, that could be considered for regular review.

Agenda Item 9. Future work program

114. The ERSWG developed the following workplan. Tasks of an ongoing or administrative nature are not shown unless they are new for 2023.

Activity	Approximate Period	Resource
Present the results of studies of Southern Bluefin Tuna targeting vessels on the effectiveness of combined mitigation measures, such as use of tori line, weighted branch-lines, and nighttime setting.	ERSWG 15	Taiwan

Activity	Approximate Period	Resource
Members' annual reports to future ERSWG meetings should include both the FAO 3 alpha species code and the species/species group name in the table for reporting estimates of total ERS mortality.	ERSWG 15	All Members
The Secretariat's Data Exchange summary paper to ERSWG 15 should: • Include the rate of capture in addition to the number of observed captures in order to control for the varying effect of observer coverage; and • Table 5 of the paper should be expanded to include Statistical Areas 4 and 14.	ERSWG 15	Secretariat
Provide the summary of key points of ERSWG reports to other tuna RFMOs, in accordance with agreed format.	After CCSBT 29	Secretariat
Translate the ACAP Seabird Identification Guide into Indonesian. ACAP and the CCSBT to share funding of the translation.	ERSWG 15	ACAP Secretariat
Investigate the use of BMIS as a potential host for a seabird photo database for the CCSBT.	ERSWG 15	Secretariat
Provide revised historical data for the EDE that includes all mortalities (i.e. both discard mortalities and retained commercial catch).	Before the July 2022 EDE	Australia
Conduct the SEFRA as an ERSWG collaborative assessment in the areas of data provision, model development and examination of model robustness.	Intersessionally prior to ERSWG 15	New Zealand (lead) and all Members to participate
Combine Agenda item 5.1.3 and 5.1.5 for future meetings.	ERSWG 15	Secretariat
Each Member to report on its progress with implementing actions in accordance with the agreed Multi-year Seabird Strategy.	ERSWG 15	Members
Review the overall progress with implementing the agreed Multi-year Seabird Strategy.	ERSWG 15	ERSWG
Provide an update on interactions between the recreational SBT fishery and fur seals around Tasmania, and the work that Australia plans to conduct to better quantify the nature of these interactions, if required.	ERSWG 15	Australia
Consider the focus and agenda for the intersessional technical ERSWG meeting in 2023.	As soon as possible	Members

Agenda Item 10. Other business

115. Discussion for this agenda item commenced by correspondence in advance of the ERSWG meeting.

116. No other business was raised by Members during the pre-meeting discussion.

Agenda Item 11. Referral of ERS matters for consideration by CCSBT subsidiary bodies

117. In accordance with the ERSWG's Terms of Reference, the full report of the ERSWG will be provided to the ESC, which may provide comments on the report to the EC. The ESC should be informed that information from scientific observers and consideration of electronic monitoring techniques form an integral part of the Muti-Year Seabird Strategy, and the ESC may wish to consider those.

118. There were no specific matters identified for referral to the CC, however, the CC should be informed of the proposed actions in the Multi-Year Seabird Strategy that have a compliance focus (particularly under Specific Objective 4) and it would be appropriate for the CCSBT Compliance Committee to consider these. In addition, both the ESC and the CC should be informed that information from scientific observers and consideration of electronic monitoring techniques form an integral part of the Muti-Year Seabird Strategy.

Agenda Item 12. Recommendations and advice to the Extended Commission

119. The ERSWG recommends that the EC adopt:

    1) The proposed template in Attachment B of paper CCSBT-ERS/2203/07 for summarising key points of ERSWG reports for provision to other tuna RFMOs.

    2) The Draft Multi-year Seabird Strategy which is provided as Attachment 4 to the ERSWG Report. The overall objective and 5 specific objectives of this strategy were agreed by the EC in 2019. The revised strategy contains actions under each of specific objectives that were developed and agreed during ERSWG 14.

120. The ERSWG wishes to advise the EC of the following matters:

    1) The European Union had advised prior to the meeting that it would not be attending and South Africa did not attend.

    2) Neither EU nor South Africa submitted an annual report to the ERSWG.

    3) The ERSWG did not seek to amend its previous advice that the level of interaction between seabirds and SBT fisheries is still a significant level of concern.

    4) The ERSWG noted that ACAP has updated its advice concerning the most effective ways to reduce seabird bycatch in pelagic longline fisheries. This still includes the use of the following three best practice measures

simultaneously: branch line weighting, night setting and bird scaring lines. In addition, the use of any of three assessed hook-shielding devices or the use of a newly assessed underwater bait setting device have now been recommended as suitable alternatives.

5) The meeting confirmed its previously agreed advice for all shark species caught in SBT fisheries, that there were currently no specific concerns about shark bycatch that warranted additional mitigation requirements.

6) The ERSWG considered the report of the CCSBT Performance Review. A total of 37 recommendations were initially determined to be of potential relevance to the scope of the ERSWG. These were provided to members prior to the meeting for comment on 5 aspects:

   - Whether you consider this to be an appropriate recommendation for the ERSWG to consider (i.e. within the ERSWG's scope).
   - Priority of the recommendation from your perspective.
   - The level of action required for the recommendation.
   - Which CCSBT body is recommended to take the lead for implementing the recommendation?
   - Pertinent comments relating to the recommendation.

   The responses were collated by the Secretariat and considered during the meeting. The responses were then reviewed and important recommendations were considered to those for which:

   - At least half the Members view the recommendation as appropriate for the ERSWG to consider;
   - At least half the Members consider the recommendation to be a medium or high priority;
   - Some new actions were considered to be necessary to implement the recommendation; and
   - At least half the Members considered the ERSWG should take the lead in implementing the recommendation.

   Using these criteria, the following seven recommendations were considered as being most important from the ERSWG's perspective and required new action, noting that even with these recommendations, there were some differences of views between Members:

   - PR2021-6 - *Consider the feasibility of a collaborative programme (between RFMOs and institutions with competency in biodiversity conservation) to forecast the likely impacts of climate change on tuna ecosystems, SBT, ERS, and their productivity, distribution, and resilience*;
   - PR2021-8 - *Conduct capacity building programs to improve data collection and reporting, in particular in developing countries*;
   - PR2021-11 - *Establish mechanisms to improve consistency and avoid ambiguity in national reports*;
   - PR2021-20 - *Establish a clear and concise bycatch policy and management strategy*;

- PR2021-27 - *Strengthen the implementation of current measures to reduce bycatch, particularly of seabirds, and explore the potential for an incentivised mechanism to combat an increase in bycatch and address the impact of fisheries on living marine resources and the ecosystem*;
- PR2021-30 - *Identify and analyse compatibility issues and risks associated with adopting resolutions from other RFMOs, especially in monitoring, compliance, and surveillance for ERS, and develop mitigation measures and strategies*; and
- PR2021-54 - *Review the reporting templates periodically*.

7) The EC has requested that the ERSWG consider the need for annual meetings and provide advice to the EC on how CCSBT's focus on ERS can be improved, particularly on seabird bycatch. Recommendation PR2021-05 from the Performance Review expressed a similar view. The ERSWG discussed this matter and agreed that more regular meetings should be held but to have a hybrid approach for future ERSWG meetings. This involves having a full, face-to-face ERSWG meeting every second year and scientific technical meeting(s) in the intersessional years.

8) It was agreed that national reports would only be submitted by Members to the full meetings of the ERSWG every second year. The intersessional meetings can be held virtually and would focus on specific technical priorities agreed by the Members.

Agenda Item 13. Conclusion

13.1 Adoption of meeting report

121. The report was adopted.

13.2. Recommendation on timing of the next meeting

122. The ERSWG agreed that two hybrid[3] scientific technical meetings should be conducted during 2023. One of these will focus on data provision for SEFRA and the other will focus on updating SEFRA. These will be highly technical meetings, and it was considered that interpretation would not be required. The Secretariat will liaise with Members to determine the timing, duration, location and other details relating to these meetings to enable a budget to be submitted to CCSBT 29.

123. The next annual meeting of the ERSWG is proposed to be held in approximately two years.

13.3. Close of meeting

124. The meeting closed at 4:03 pm, 25 March 2022.

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[3] Allowing participants to attend either in-person or online.

List of Attachments

Attachment

1. List of Participants
2. Agenda
3. List of Documents
4. Multi-year Seabird Strategy

Attachment 1

List of Participants
The 14th Meeting of Ecologically Related Species Working Group

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Commission for the Conservation of
Southern Bluefin Tuna

みなみまぐろ保存委員会

Agenda
Fourteenth meeting of the Ecologically Related Species Working Group
21 – 25 March 2022
Online

1. Opening
   - 1.1 Adoption of the Agenda
   - 1.2 Adoption of Document List
   - 1.3 Appointment of Rapporteurs
2. Annual reports
   - 2.1 Members
   - 2.2 Secretariat report on the ERSWG Data Exchange
3. Reports of meetings and/or outcomes of other organisations relevant to the ERS Working Group
4. Review of progress with the work program from ERSWG 13
5. Information and advice on ERS
   - 5.1 Seabirds
     - 5.1.1 Information on stock status
     - 5.1.2 Estimates of ERS mortality and associated uncertainty
     - 5.1.3 Ecological risk assessment
     - 5.1.4 Assessment and advice on mitigation measures
     - 5.1.5 Use of new 5*5 by quarter data
     - 5.1.6 Seabird species identification
     - 5.1.7 Multi-year seabird strategy
   - 5.2 Sharks
     - 5.2.1 Information on stock status
     - 5.2.3 Estimates of ERS mortality and associated uncertainty
   - 5.3 Other ERS
6. Education and public relations activities
7. Consideration of recommendations from the Performance Review of the CCSBT
8. How to improve the CCSBT's focus on seabird bycatch

9. Future work program

10. Other business

11. Referral of ERS matters for consideration by CCSBT subsidiary bodies

12. Recommendations and advice to the Extended Commission

13. Conclusion
    13.1. Adoption of meeting report
    13.2. Recommendation on timing of the next meeting
    13.3. Close of meeting

Attachment 3

List of Documents
Fourteenth Meeting of the Ecologically Related Species Working Group

(CCSBT-ERS/2203/)

1. Provisional Agenda
2. List of Participants
3. List of Documents
4. (Secretariat) Summaries from the 2021 ERSWG Data Exchange (ERSWG Agenda Item 2.2)
5. (Secretariat) Information from the Compliance Committee (ERSWG Agenda Item 2.2 and 10)
6. (Secretariat) Chair's Report of the 1st Joint Tuna RFMO By-catch Working Group Meeting (ERSWG Agenda item 3)
7. (Secretariat) Progress on Action Items from the ERSWG 13 Workplan (Rev.1) (ERSWG Agenda Item 4)
8. (Secretariat) ERS Recommendations from the Performance Review of the CCSBT (ERSWG Agenda Item 7)
9. (CCSBT) 2021 CCSBT Performance Review report (ERSWG Agenda Item 7)
10. (Australia) Developing a multi-year seabird strategy (ERSWG Agenda Item 5.1.7)
11. (Japan) Preliminary result of effectiveness of seabird mitigation measures by observer data in 2018-2019 (ERSWG Agenda Item 5.1.4)

12-A. (New Zealand) Hotspot analysis using Antipodean albatross as a test case - Part A: Assessing inter-annual variability in Antipodean albatross distributions in the Southern Hemisphere (ERSWG Agenda Item 5.1.3)

12-B. (New Zealand) Hotspot analysis using Antipodean albatross as a test case: Part B: Assessing inter-annual variability in Antipodean albatross distributions in the Southern Hemisphere (ERSWG Agenda Item 5.1.3)

13. (New Zealand) Risk assessment framework for seabirds in the southern hemisphere (ERSWG Agenda Item 5.1.3)
14. (New Zealand) Antipodean albatross multi-threat risk assessment: Overview of approach and methods (ERSWG Agenda Item 5.1.3)
15. (New Zealand) Factors affecting Protected Species captures in domestic surface longline fisheries (ERSWG Agenda Item 5.1.4)
16. (ACAP) Conservation status of albatrosses and petrels and advice on reducing their bycatch in CCSBT longline fisheries (ERSWG Agenda Item 5.1.1)

17. (BirdLife International) Threats to seabirds: A global assessment (ERSWG Agenda Item 5.1.1)
18. (BirdLife International) Variation in live-capture rates of albatrosses and petrels in fisheries, post-release survival and implications for management (ERSWG Agenda Item 5.1.1)
19. (BirdLife International) Update on the "Project proposal for enhancing education on and implementation of Ecologically Related Species seabird measures within CCSBT fisheries" (ERSWG Agenda Item 6)

(CCSBT-ERS/2203/BGD)

1. (Secretariat) Annual Report on Members' implementation of ERS measures and performance with respect to ERS (*Previously* **CCSBT-CC/2110/05**) (ERSWG Agenda Item 2.2)
2. (Japan) Report of Japanese scientific observer activities for southern bluefin tuna fishery in 2018 (*Previously* **CCSBT-ESC/1909/19**) (ERSWG Agenda Item 2.1)
3. (Japan) Report of Japanese scientific observer activities for southern bluefin tuna fishery in 2019 (*Previously* **CCSBT-ESC/2008/17**) (ERSWG Agenda Item 2.1)
4. (Japan) Report of Japanese scientific observer activities for southern bluefin tuna fishery in 2020 (*Previously* **CCSBT-ESC/2108/26**) (ERSWG Agenda Item 2.1)
5. (BirdLife and CCSBT) Update on the Project for Enhancing the Implementation of Ecologically Related Species Seabird Measures within CCSBT Fisheries (*Previously* **CCSBT-CC/2110/22 (Rev.2)**) (ERSWG Agenda Item 6)

(CCSBT-ERS/2203/Annual Report- ）

Australia	Ecologically related species in the Australian Southern Bluefin Tuna Fishery 2017-18, 2018-19 and 2019-20
Fishing Entity of Taiwan	National Report of Taiwan: Ecologically Related Species in the Taiwanese Southern Bluefin Tuna Fishery 2018-2020
Indonesia	
Japan	National Report of Japan Overview of Researches on Ecologically Related Species in Japanese SBT Longline Fishery, 2018-2020
New Zealand	Report to the Ecologically Related Species Working Group – New Zealand

Republic of Korea

2022 Annual Report to the Ecologically Related Species Working Group (ERSWG)

(CCSBT- ERS/2203/Info)

1. (Humane Society International) Pelagic Longline Setting – How day/night-straddling sets impact monitoring, compliance and effectiveness of seabird bycatch mitigation (ERSWG Agenda Item 5.1.4)
2. (BirdLife International) BirdLife International report on recent activities (ERSWG Agenda Item 3)
3. (BirdLife International) SeaBOS Endangered Species Strategy (ERSWG Agenda Item 3)
4. (BirdLife International) Environmental drivers of movement in a threatened seabird (ERSWG Agenda Item 5.1.1)
5. (BirdLife International) Movements and diving behaviour of white-chinned petrels: Diurnal variation and implications for bycatch mitigation (ERSWG Agenda Item 5.1.1)
6. (BirdLife International) Global political responsibility for the conservation of albatrosses and large petrels (ERSWG Agenda Item 5.1.1)
7. (BirdLife International) Tracking juveniles confirms fisheries-bycatch hotspot for an endangered albatross (ERSWG Agenda Item 5.1.1)
8. ~~(BirdLife International) Review of CCSBT work to protect seabirds 2007-2021 (ERSWG Agenda Item 5.1.4)~~
9. (BirdLife International) SeaBOS Best practices for reducing negative impacts on endangered elasmobranchs and seabirds (ERSWG Agenda Item 3)
10. (Japan) Modified SMMTG Recommendations Agreed by ERSWG 11 (ERSWG Agenda Item 5.1.7)

(CCSBT-ERS/2203/Rep)

1. Report of the Twenty Eighth Annual Meeting of the Commission (October 2021)
2. Report of the Sixteenth Meeting of the Compliance Committee (October 2021)
3. Report of the Twenty Seventh Annual Meeting of the Commission (October 2020)
4. Report of the Fifteenth Meeting of the Compliance Committee (October 2020)
5. Report of the Twenty Sixth Annual Meeting of the Commission (October 2019)
6. Report of the Fourteenth Meeting of the Compliance Committee (October 2019)
7. Report of the Twenty Fourth Meeting of the Scientific Committee (September 2019)

8. Report of the Thirteenth Meeting of the Ecologically Related Species Working Group (May 2019)
9. Report of the Twenty Fifth Annual Meeting of the Commission (October 2018)
10. Report of the Fifth Meeting of the Strategy and Fisheries Management Working Group (March 2018)
11. Report of the Twelfth Meeting of the Ecologically Related Species Working Group (March 2017)

Attachment 4

Multi-year Seabird Strategy

Introduction

The Ecologically Related Species Working Group commenced consideration of a multi-year seabird strategy at ERSWG12.

ERSWG has decided that the seabird strategy should, among other things:

- consider research, monitoring needs
- include actions for reducing uncertainty and associated risks
- consider recommendations from the *Report of the Effectiveness of Seabird Mitigation Measures Technical Group* (CCSBT-ERS/1503/Rep1) (the SMMTG Report), as modified by ERSWG11 (CCSBT-ESC/1509/Rep2, Att. 4), noting progress in implementing the recommendations (CCSBT-ERS/1905/05)
- take account of the *International Plan of Action for reducing incidental catch of seabirds* (IPOA-S) (FAO 1999) and associated best practice technical guidelines (BPTG) (FAO 2009).

The Extended Commission for the Conservation of Southern Bluefin Tuna has adopted a *Resolution to align CCSBT's Ecologically Related Species measures with those of other tuna RFMOs* (CCSBT25: Noumea, New Caledonia, 15–18 October 2018). This binding Ecologically Related Species (ERS) measure requires CCSBT Members to implement the ERS measures of other relevant Regional Fisheries Management Organisations (RFMOs) as part of the CCSBT's determination to mitigate incidental harm to ERS caused by fishing for southern bluefin tuna (SBT).

ERSWG remains of the view that the level of interaction between seabirds and SBT fisheries is still a significant level of concern. Some seabird species, particularly some albatross and petrel species, are threatened with global extinction (CCSBT-ERS/2203/16).

ERSWG continues to progress the development of the multi-year seabird strategy. The EC has agreed to the overall objective and five specific objectives for the strategy. ERSWG has developed actions under each of the specific objectives. ERSWG has also developed the approach to implementation and evaluation of the strategy. ERSWG proposed that the seabird strategy be implemented taking account of the General Principles of the *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea Convention of 10 December 1982 Relating to the Conservation and Management of Highly Migratory Fish Stocks and Straddling Fish Stocks* (UN Fish Stocks Agreement).

ERSWG will continue work on the multi-year seabird strategy, including through intersessional consultations.

Overall objective

This strategy's overall objective is:

> To reduce or eliminate seabird bycatch, such that SBT fisheries do not impose a significant adverse impact on seabirds.

Specific objectives

To achieve the overall objective, the following specific objectives have been developed consistent with the International Plan of Action for Reducing Incidental Catch of Seabirds, and associated Best Practice Technical Guidelines (BPTGs), that recommend RFMOs establish attainable objectives that lead to ongoing reductions in seabird mortality (FAO 1999, 2009).

> *Objective 1*: To reduce the level of impact of seabird bycatch by SBT fishing operations on seabird populations.
>
> *Objective 2*: To ensure the collection of timely, reliable, representative data to support accurate regular estimations of total seabird mortality in SBT fisheries and its impact on seabird populations.
>
> *Objective 3*: To develop and refine, in collaboration with industry and ACAP, practical, cost-effective and safe seabird bycatch mitigation technologies and techniques.
>
> *Objective 4*: To develop and refine compliance approaches to ensure fleet-wide compliance with seabird bycatch mitigation measures required while conducting fishing for SBT.
>
> *Objective 5*: To enhance education and outreach programs highlighting the importance of mitigating seabird interactions while fishing, and advocating effective implementation of mitigation measures.

Actions to achieve the specific objectives

The following actions will be undertaken against each of the specific objectives.

Objective 1: To reduce the level of impact of seabird bycatch by SBT fishing operations on seabird populations.			
No.	Action	Action by	Timeframe
1A	To agree on a SBT seabird bycatch target for reducing the level of impact of SBT fishing operations on seabird populations, including, but not limited to: a. Targets based on nominal reported seabird bycatch rates. b. Targets based on SEFRA outputs.	ERSWG	ERSWG15
1B	That a minimum level of 10% observer coverage is achieved on a fleet-by-fleet basis for SBT fisheries or a comparable minimum level of review of video footage collected using electronic monitoring	CCSBT Members	Ongoing
1C	Evaluate the effectiveness of the seabird CMMs introduced around 2005 by tuna RFMOs, in the context of reducing the overall seabird mortalities, taking into consideration fleet differences and seabird distributions and identify the areas for improvement. The outcomes from the evaluation will be communicated across tuna RFMOs and used as a basis for future evaluations.	ERSWG	Within 2 years, after that every 5 years
1D	Agree on the list of priority species and corresponding management targets, taking into account the status of seabird population, distributional overlaps with SBT fisheries, and significance of SBT fisheries in their mortality.	ERSWG, CCSBT	Within 2 years
1E	Update SEFRA seabird risk assessment to evaluate the progress in seabird bycatch mitigation by SBT fisheries and their impacts on seabird populations from the previous assessment in 2019. The results to be communicated across tuna RFMOs.	ERSWG	ERSWG 15, after that every 2 years

1F	Establish a robust definition of *high risk* areas that takes into account the precautionary approach by: a. Establishing a definition of *high-risk* areas. b. Identifying areas that meet the definition. c. Characterising the nature of the risk in each area. d. Developing tailored measures aimed at reducing those risks.	ERSWG, CCSBT	Within 2 years

Objective 2: To ensure the collection of timely, reliable, representative data to support accurate regular estimations of total seabird mortality in SBT fisheries and its impact on seabird populations.			
No.	Action	Action by	Timeframe
2A	Define improved protocols for reporting and analysing fishing effort data in the context of estimating seabird bycatch and its impacts on seabird populations, including concerning any implicit assumptions used when raising data.	ERSWG	Within 2 years
2B	Report and disseminate annually numbers of incidentally caught seabirds by species according to agreed reporting standards, total and observed effort, and mitigation use, according to agreed formats and strata.	CCSBT Members, Secretariat	Annually
2C	Explore options for the use of electronic monitoring systems by: a. Including seabirds (and other ERS) in discussions and the development of electronic monitoring systems. b. Considering electronic monitoring systems that contribute to, among other things, the effective monitoring of the implementation of seabird mitigation measures, and seabird interaction levels, throughout SBT fisheries.	ERSWG, CC, SC, ACAP, other tuna RFMOs	Within 3 years

2D	Explore methodologies and techniques for estimating seabird mortalities in a timely and reliable manner, based on best available information and technologies, and not limited to observers and electronic monitoring.	CCSBT Members	Ongoing
2E	Agree on the CCSBT standard protocols for collecting feather samples and photographing dead bycaught seabirds, based on ACAP guidance.	ERSWG	ERSWG 15
2F	Review observer coverage of each stratum and fishing fleet to identify gaps and where additional coverage is needed concerning seabird bycatch.	CCSBT Members	At each ERSWG
2G	Update guidance for observers to include electronic monitoring seabird related task priorities including how to allocate time appropriately, recognising the multiple tasks undertaken, where applicable.	ERSWG	ERSWG 15
2H	Review procedures and protocols to facilitate improved reporting of seabird interactions to species level by: a. Consistent reporting of seabird interactions across SBT fishing fleets. b. Removing any ambiguity about species groupings.	ERSWG, CC, BirdLife International	Within 2 years, after that every 5 years
2I	Consider options for the use of fishing vessel logbook records of seabird interactions by examining the potential for logbook records to supplement other seabird interaction information sources, where appropriate.	ERSWG, CC, ACAP, other tuna RFMOs	Within 3 years

Objective 3: To develop and refine, in collaboration with industry and ACAP, practical, cost-effective and safe seabird bycatch mitigation technologies and techniques.			
No.	Action	Action by	Timeframe
3A	Encourage CCSBT Members to undertake and support research and development to refine practical, cost-effective and safe seabird bycatch mitigation technologies and techniques.	CCSBT Members	Ongoing
3B	Advocate for strengthened seabird CMMs relevant to SBT fisheries within tuna RFMOs, where appropriate, taking account of, among other things, the best practice advice provided by ACAP.	CCSBT Members	Ongoing
3C	Regularly monitor and identify changes in the spatial overlap of fishing effort for SBT and the distribution of seabird species, particularly threatened albatross and petrel species, and inform the relevant fisheries across tuna RFMOs.	ERSWG	At each ERSWG
3D	Assess the cumulative impacts of fishing for SBT on seabirds, particularly threatened albatross and petrel species, across tuna RFMOs including developing methods for extrapolating seabird bycatch levels and seabird bycatch rates to identify total mortalities and total mortality rates.	ERSWG	At each ERSWG
3E	Consider the development of protocols on potential management responses to high seabird bycatch events.	ERSWG, BirdLife International, ACAP	Within 3 years

Objective 4: To develop and refine compliance approaches to ensure fleet-wide compliance with seabird bycatch mitigation measures required while conducting fishing for SBT.			
No.	Action	Action by	Timeframe
4A	Collate information from compliance programs of CCSBT Members on implementation of seabird bycatch mitigation measures in SBT fisheries on a fleet-by-fleet basis.	CCSBT Members, Secretariat	Annually
4B	Review procedures and methods to improve compliance by SBT fishing operators with seabird CMMs and reporting requirements concerning seabird interactions by: a. Reviewing existing procedures and methods, including for in-port and transhipment at-sea inspections, and when other monitoring and surveillance technologies and techniques are used. b. Considering implementation, where appropriate, of additional monitoring and surveillance technologies and techniques. c. Considering options for management responses concerning non-compliance. d. Considering the development of options to enable, particularly for high seas SBT fishing fleets, the timely reporting of non-compliance events.	CC	Within 2 years
4C	Review data collection forms and procedures across tuna RFMOs regarding compliance with seabird CMMs by longline fishing operators and develop harmonised format to communicate and advocate across tuna RFMOs.	CC	Within 2 years, after that every 5 years

Objective 5: To enhance education and outreach programs highlighting the importance of mitigating seabird interactions while fishing, and advocating effective implementation of mitigation measures.			
No.	Action	Action by	Timeframe
5A	Share documents, formats and procedures for observer and electronic monitoring, seabird bycatch data collection through a centralised portal, e.g. the Bycatch Mitigation Information System hosted by the Western and Central Pacific Fisheries Commission.	Secretariat, BMIS	Ongoing
5B	Pursue collaboration across tuna RFMOs in capacity building in seabird bycatch monitoring and analyses.	CCSBT Members, Secretariat	Ongoing
5C	Explore options (if data are available) for the establishment of a reference DNA database for seabird species bycaught during fishing for SBT across tuna RFMOs.	CCSBT Members, ACAP, Seabird Experts	Within 2 years
5D	Support the establishment of a reference photographic database through a centralised portal, e.g. the Bycatch Mitigation Information System (BMIS) hosted by the Western and Central Pacific Fisheries Commission, for seabird species bycaught during fishing for SBT across tuna RFMOs. This may include involving volunteer networks and seabird specialists.	CCSBT Members, BMIS, Seabird Experts	Within 2 years
5E	Translate ACAP's seabird species identification guide into key languages (e.g. French, Indonesian, Korean, Spanish, and Taiwanese) and disseminate together with the other languages (e.g. English Japanese).	Common Ocean Project II, ACAP	ERSWG 15

Implementation and Evaluation

Effective implementation of the Seabird Strategy will be monitored through direct observer programmes, audited electronic monitoring systems, and other monitoring and compliance approaches at-sea and in port. This will ensure fishing operators fully and effectively implement their seabird bycatch mitigation obligations and accurately report any incidental catch of seabirds. Implementation will require sufficient capacity

among individual CCSBT Members, and collectively, to collate, analyse and develop responses that avoid or minimise the incidental catch of seabirds in SBT fisheries.

The ERSWG, with assistance from CCSBT Members, will monitor the effectiveness of the Seabird Strategy. The progress of the Seabird Strategy will be evaluated at intervals of no more than four years, with the plan revised as appropriate. The strategy will remain in effect until the overall objective is achieved, with particular regard given to the reduction of seabird bycatch levels, and reduction in seabird bycatch rates.

References

FAO (1999) *International Plan of Action for reducing incidental catch of seabirds in longline fisheries.* Rome, Italy

FAO (2009) *Fishing Operations. 2. Best practices to reduce incidental catch of seabirds in capture fisheries.* Rome, Italy

IUCN (International Union for Conservation of Nature (2019) The IUCN Red List of Threatened Species. Version 2018-2. Available at: http://www.iucnredlist.org