

Commission for the Conservation of
Southern Bluefin Tuna



みなまぐろ保存委員会

Report of the Ninth Meeting of the Ecologically Related Species Working Group

27-30 March 2012

Tokyo, Japan

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Agenda Item 1. Opening

1. The independent Chair, Mr Alexander Morison, welcomed participants and opened the meeting.
2. Each delegation introduced its participants. The list of meeting participants is at **Attachment 1**.

1.1 Adoption of agenda

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

1.2 Adoption of Document List

4. The list of documents presented to the meeting is at **Attachment 3**. The Chair noted that a small number of documents were submitted after the due date for the meeting. The meeting agreed to accept these documents, but reminded Members and Cooperating Non-Members (CNMs) of the importance of submitting documents on time.

1.3 Appointment of Rapporteurs

5. Members agreed to assist the Secretariat in drafting the report by providing short paragraphs summarising each presentation and by providing rapporteurs for most of agenda items 5 and 6.

Agenda Item 2. Annual Reports

2.1 Member reports

6. Annual reports from all Members were tabled and each Member responded to questions of clarification that were raised by the other Members.
7. During the detailed question and answer session it became apparent that many of the questions were to clarify issues that might have been resolved if Members had adopted more standardised reporting of ERS in the annual reports. The Chair suggested that the development of standardised reporting would be of value to the group to reduce the time needed for such clarification, to provide more comparable information between Members and to allow the ERSWG to better consider trends across SBT fisheries. There was general support that this would improve the working group's capacity to contribute to the CCSBT Strategic Plan.
8. The meeting discussed how reporting could be standardised in the annual reports to allow better monitoring of the bycatch in the fishery. The first consideration was the definition of the SBT fishery. A common definition of the SBT fishery is required so that all Members and CNMs will report equivalent information on

ERS interactions. For the purposes of ERS reporting, the SBT fishery was defined as:

All fishing effort by authorised vessels where SBT is targeted or caught.

The Meeting agreed to report on the most recent calendar year for which data were available.

9. The meeting also discussed stratification of the fishery for the purpose of providing estimates of ERS interactions. The objective of stratification is to increase the accuracy and decrease the variance of the estimates. The strata should be relatively homogeneous with regard to the ERS interaction. For example the longline fishery could be stratified both spatially and seasonally to reflect the difference in expected interactions for each area of the fishery throughout the year. Observations (data) will be required for each stratum to allow the numbers of interactions to be scaled up to a total estimate. The meeting agreed that the default strata should be CCSBT statistical areas unless an analysis has shown that better strata could be defined for the ERS interactions in the national fishery.
10. The meeting suggested that Members and CNMs should show how representative the observer coverage was of the overall fishery in each year. A comparison of the distribution of the fishery to the observed catches shows how well the fishery was sampled. The reporting of ERS interactions should be separate for each stratum defined in the fishery. The effort observed and total effort in each stratum should be reported.
11. The meeting proposed these changes be incorporated into the Template for the Annual Report to the Ecologically Related Species Working Group (ERSWG) and accordingly produced a revised table for reporting ERS data summaries (**Attachment 4**). The meeting recommended that this format be used for future Annual reports to the ERSWG.
12. Discussion of bycatch rates presented in the annual reports frequently noted the variability in catch rates. The distribution of seabirds, fisheries and observer effort among other factors may contribute to this variability. It is important to include spatial and temporal stratification of the results in order to meaningfully interpret differences in bycatch rates and allow estimates to be scaled up from observations.

2.2 Cooperating Non-Member reports

13. The Chair advised that only the European Union had provided an annual report.
14. The Chair noted his disappointment that the Philippines and South Africa did not provide annual reports, noting that some of the information potentially provided within these reports is not included in any other reports to meetings of CCSBT.

Agenda Item 3. Review of Relevant International Instruments

3.1 Review of the implementation of relevant international instruments

15. Japan tabled paper CCSBT-ERS/1203/20 at the meeting, and it is discussed under agenda item 6.4.1.
16. This agenda item was discussed in agenda item 4.2.

3.2 Review and recommendations on other best practice guidelines

17. The meeting agreed that this item had been sufficiently covered under other agenda items, and subsequently there was no further discussion.

Agenda Item 4. Reports of meetings of other organisations relevant to the ERS Working Group

4.1 Recommendations of the Joint Tuna RFMO Technical Bycatch Working Group

18. The Chair presented paper CCSBT-ERS/1203/07, which provided a report of the discussions and recommendations from the Joint Tuna RFMO Technical Bycatch Working Group.
19. The meeting noted that the recommendations provided in the paper were preliminary and had not been formally agreed by the Joint Working Group.
20. The meeting further noted that the Joint Working Group had decided to meet via electronic means on a quarterly basis, but that this had not yet happened. The Chair advised that he would follow-up again with the Coordinator of the Joint Working Group on progressing meetings and work.

4.2 Regional Fisheries Management Organisations/Arrangements/ NGOs

21. The meeting noted the report (CCSBT-ERS/1203/Info08) provided by the IOTC Secretariat in relation to discussions and recommendations on seabirds arising from the IOTC scientific processes during 2011. The report was considered to be important to the ERSWG's meeting and was further discussed under agenda item 6.4.
22. Birdlife provided a brief summary of developments of its work, including the albatross and petrels global tracking database and the introduction of an albatross taskforce working in South America and South Africa to assist fishers in identifying seabird species.
23. Birdlife noted that while the Albatross taskforce did not currently work directly with CCSBT Members, it would be keen to work with the fishing fleets of CCSBT Members and CNMs if the Members so desired.
24. ACAP tabled two papers, CCSBT-ERS/1203/Info05 and CCSBT-ERS/1203/Info06 containing relevant extracts of the reports from its working groups on seabird global population status and seabird bycatch mitigation having particular relevance to discussions at this meeting.

Agenda Item 5. Information and advice on ERS

5.1 Seabirds

5.1.1 Information on stock status

25. The meeting considered three papers that provided estimates of seabird mortality in SBT fisheries, an important component of determining the status of seabird populations.
26. Taiwan presented paper CCSBT-ERS/1203/08, which used onboard data from Taiwanese SBT longline fishing vessels in the southern Indian Ocean from 2007 to 2010 to estimate the scale of the seabird bycatch.
27. Japan presented paper CCSBT-ERS/1203/21, which addressed estimation of annual incidental catch of seabirds in Japanese SBT longline fishery for the 2008-2010 fishing years. Annual seabird catch estimates were 4,392 (95% CI: 2,414-6,394) in 2008, 2,820 (95% CI: 1,176-4,499) in 2009 and 6,147 (95% CI: 579-14,902) in 2010, respectively. The recent level of incidental catch of seabirds in the Real Time Monitoring Program (RTMP) has been stable around 3,000-6,000 seabirds/year.
28. The working group noted the importance of presenting bycatch rates (birds per thousand hooks). The number of hooks and sets for the whole fishery and for the observed part of the fishery were provided for 4 separate strata that allow scaled estimates to be calculated. Based on data the bycatch rates appear variable and relatively high at times.
29. New Zealand presented paper CCSBT-ERS/1203/11, which provides a ten year summary of seabirds captures in New Zealand commercial fisheries. The analyses, based on observer data and fishery effort data, report seabird species catch across fisheries and, catch of all seabirds by fishery. Estimates of captures were made using statistical modeling where there was sufficient observer coverage, and a simpler ratio-estimation method was used for areas with low observer coverage.
30. The working group noted that due to the difference in bycatch rates expected for different sizes of vessel (illustrated by the New Zealand paper), it would be useful for seabird bycatch estimates to be stratified by fleet as appropriate in future annual reports.
31. The meeting noted that in these papers, estimation methods and observer data were available that allowed estimation of total mortality from the SBT fisheries; however, much of the data in the annual Reports were not presented in such a way as to allow an estimate of total mortality from all the SBT fisheries at this time.
32. The meeting recommended that data reporting by Members and CNMs be standardised (as recommended at paragraphs 8 - 11) to allow better monitoring of the level of seabird bycatch and to allow approximate estimates of total seabird mortality in SBT fisheries to be made at future ERSWG meetings. The meeting further recommended that such reporting should be harmonised with other RFMOs to the extent possible.

33. The working group noted that it was useful to have data provided by individual strata so that the estimation procedure could be repeated by others to reproduce the estimates in annual reports. In general greater clarity was requested where data were imputed and on the source of the imputation data when making these estimates.
34. ACAP presented paper CCSBT-ERS/1203/Info05, which provided an update on the status and trends of albatrosses and petrels that breed and/or forage in areas where SBT are fished. As one example relevant to SBT fisheries it was noted that the Indian yellow-nosed albatross, has a small global population of approximately 39,000 breeding pairs and is classified as endangered by the IUCN. This species figures prominently as bycatch in some SBT fisheries.
35. The meeting noted the threatened status of many albatross and petrel species that are caught in SBT fisheries and the generally poor status of many of their individual populations. The ERSWG supported the Kobe process to collaborate with other tuna RFMOs to strengthen mitigation measures and monitor their effectiveness.
36. The meeting noted that having science based population status summaries for seabirds from ACAP (CCSBT-ERS/1203/Info05), which incorporated up to date information from Birdlife International and other key sources, was particularly useful for the work of the ERSWG.
37. The meeting requested that in advance of future ERS meetings the Secretariat obtain the most up to date seabird information including population status summaries and information on mitigation for relevant seabird species from ACAP.

5.1.2 Information from other fisheries of relevance

38. No papers were presented specific to this agenda item and discussion on this topic is covered in other sections of the ERS report.

5.1.3 Ecological risk assessment

39. New Zealand presented paper CCSBT-ERS/1203/10, which reported on a risk assessment of incidental mortality from commercial fishing for seabird species in New Zealand fisheries. Risk was assessed by comparing the total number of seabirds potentially killed while fishing against the Potential Biological Removal (PBR) index (an index which represents the amount of human-induced mortality a species can sustain without compromising its persistence). Because estimates of seabirds' demographic parameters and of fisheries related mortality are imprecise, the uncertainty around the demographic and mortality estimates was explicitly considered, which allowed uncertainty in the resulting risk to be calculated, and also allowed the identification of parameters where improved precision would reduce overly large uncertainties. The risk was estimated independently for each fishery, and there was no assumption that the vulnerability of seabirds to capture was related between different fisheries - this has the consequence that some species may be caught infrequently in well observed fisheries, but still have high risk associated with poorly observed fisheries.

40. The report highlighted a significant risk, i.e. high probability that fishing mortality exceeds what the population can sustain to a number of albatross and petrel species from commercial fishing from within New Zealand's EEZ. The additional risks to these species from fishing outside New Zealand's EEZ have not been included.
41. Many limitations were identified in the risk assessment and these may result in biased estimates (either too high or too low) of the risk of fishing to some seabirds. The conclusions should therefore be interpreted with caution, as some species might be at risk, even if their risk ratio was estimated to be lower than one - conversely, the fisheries-related fatalities may be overestimated in poorly observed fisheries. However, the CCSBT-ERS/1203/10 noted that risk assessment is proving useful in providing advice to fisheries managers on risk management, in particular on where, when and which species are likely to be of more urgent need for action, and, where future research and observer coverage should be directed to improve information flows.
42. New Zealand presented paper CCSBT-ERS/1203/09, which elaborated a semi-quantitative methodology of risk for seabird interactions with CCSBT longline fisheries. The paper demonstrated how productivity, range, population information about seabirds susceptible to mortality in longline fisheries can be combined with information about species catch probability and fishing effort data. This analysis enabled species to be ranked in terms of the relative risk of interactions with fisheries, and for zones of fishing to be identified as high or low risk, in terms of overall probability of interactions with many species of seabirds. It was noted that similar analyses had been used in New Zealand domestic fisheries, and management actions in relation to the findings were to assist with the allocation of observer or research effort. Similarly, ERA analyses using these same techniques had been commissioned for WCPFC longline fisheries and were assisting in decisions on observer deployments.
43. The meeting noted that the analyses were useful, and such outputs could help the Extended Commission determine where to implement risk reduction techniques. It was noted that such analyses could identify areas and species of greatest interest for risk reduction, but also highlighted where data gaps occurred. In some cases, a more detailed analysis of seabird population demographic changes, using long-term datasets may be warranted, in a similar mode to stock assessments. It was noted, however, that datasets to support such analyses were few.
44. It was noted that such an approach could be applied to other ERS species, such as turtles and sharks, provided that species distribution and catchability estimates could be furnished. New Zealand drew attention to the existence of an analysis by some of the authors of CCSBT-ERS/1203/09 which had been commissioned by UNEP for gillnet fisheries, covering turtles, sharks, marine mammals and seabirds, indicating that such multi-taxa studies were possible.
45. There was discussion of the need to explore analyses to include fishing data from coastal states, as well as high seas fisheries. The fishing effort dataset to be used for such analyses was discussed, and it was noted that an index of fishing activity that was spatially accurate was important, and that effort data from all CCSBT parties needed to be included. Similarly, including detailed (e.g. 5.x 5 latitude/longitude) information about bird CPUE and mitigation used would greatly assist in refining the analyses.

46. New Zealand noted that a recent review of ERA techniques completed in relation to WCPFC, ICCAT and coastal fisheries had identified that techniques such as those used in CCSBT-ERS/1203/09 were the most appropriate for RFMO fisheries such as CCSBT, particularly where fine-scale data on catch of seabirds, and species-level catch information were lacking (CCSBT-ERS/1203/Info04). Birdlife International noted that they supported the methodology set out in CCSBT-ERS/1203/09, and that the methodology used was considered the best available technique for the CCSBT fisheries to use at this time. They also noted that more detailed bird distribution data would be able to be incorporated in future iterations of the study.
47. There was discussion of the ability to use such ERA to track changes in management intervention effectiveness through time, and with further elaboration of the outputs of the analysis, this would be possible.
48. The possibility of the Secretariat conducting analyses, based on data submitted by parties was explored, and considered a useful approach to undertake in future.
49. Some ERSWG Members considered that it was difficult to conduct the risk assessment for SBT in isolation and another option would be to collaborate with other tuna RFMOs to assess risk to seabirds from all the fisheries in the region. This was agreed as a good long-term objective that should be pursued. However, the ERSWG agreed that in the short term it was necessary for the group to provide the Extended Commission with advice on the impact of ERS interactions in the SBT fisheries.
50. The Chair concluded that there was general support for the application of the methodology set out in CCSBT-ERS/1203/09 to ERS ecological risk assessment in CCSBT fisheries, noting commentary about fishing effort datasets to be included, the need to provide review of other input parameters, and the need to track changes in management procedures operating in the fishery. The potential to apply the techniques to other ERS species than seabirds was to be explored.
51. The meeting recognised that the available information indicates that prompt implementation of effective seabird bycatch mitigation measures should not be delayed while ERAs are progressed.
52. The meeting recommended that the ERA process identified in CCSBT-ERS/1203/09 be used by the ERSWG for seabirds in future.

5.1.4 Future analyses to obtain improved estimates of ERS mortality and estimates of uncertainty

53. The meeting noted that a key element of improving estimates of ERS captures and mortalities and estimates of uncertainty would be future co-operation with other RFMOs, ACAP and NGOs such as Birdlife International. Specifically, measures of seabird bycatch rates, estimates of seabird captures and mortalities by species, and changes over time in seabird vulnerability to capture in fisheries.
54. The meeting noted that level of application of mandatory and voluntary mitigation measures (as specified in the annual report template in **Attachment 4**) needed to be part of future annual reporting as this allows assessment of the efficacy of the mitigation measures and thus provides input to research planning and effective risk management response. The meeting also noted that methods for

monitoring the effectiveness of mitigation require further development. This would be most usefully progressed across the whole southern ocean to further harmonise across tuna RFMOs.

55. The meeting agreed that it would be useful to further harmonise observer data collection requirements, including specification of mitigation measures, for ERS across RFMOs in tuna fisheries and that the Joint Tuna Bycatch Working Group should be asked to consider this issue in its deliberation.
56. The meeting agreed that data reporting by Members and CNMs needed to be standardised so that estimates of total seabird mortality in SBT fisheries could be made at future ERSWG meetings (see paragraphs 8-11).

5.1.5 Update on mitigation research and priorities

57. Australia presented paper CCSBT-ERS/1203/17, which describes a trial of weights at or near the hook and the effect on line sink rates and target catch rates; it followed earlier line weighting research with heavier weights placed further from the hook (see CCSBT-ERS/1203/Info24). Key reasons for the trial were:
 - despite the use of mitigation measures - including bird streamer lines, line weighting (60 g at 3.5 m) and retention of offal during setting - a low level of intermittent seabird bycatch has continued to occur in Australia's main tuna fishery, indicating that the current mitigation measures are not fully effective in all conditions; and
 - concern about the effect on target fish catch rates of the amount of weight in branch lines and the proximity of weight to the hook has prevented adoption of gear with faster sink rates that reduces the bycatch of seabirds.
58. The paper noted two new branchline weighting regimes (120 g at 2m and 40 g at the hook), involving specially-made lead weights, were trialled to determine effects on catch rates of target and non-target fish species. There were no statistically detectable differences in the catch rates of the main target and non-target fish species between branch lines with 60 g lead weights at 3.5 m from hooks (the 'industry standard') and those with either a 120 g lead weight at 2 m from the hook or a 40 g lead weight placed at the hook. Hooks on branch lines with long bottom lengths (the distance between the weight and the hook) sink in two distinct stages; slow initially, then faster. However, branch lines with 40 g weights at the hook commenced sinking immediately upon deployment and took, on average, 4.5 seconds (0.43 m/s) to reach 2 m depth, 33 % less time than industry standard gear. Much faster line sink rates were achieved for weights placed at the hook than for other weighting options.
59. The paper noted the 40 g leads placed at the hook were specially developed for this trial and incorporate several novel features which improved crew safety, reduced the amount of time spent in gear construction and facilitated gear inspection for compliance purposes. The trial demonstrated that new line weighting options, including lighter weights placed at the hook, have the potential to reduce seabird bycatch without adversely affecting target fish catch.
60. Australia noted that this research was completed after ACAP's 2011 review (CCSBT-ERS/1203/Info06) and will be presented for consideration at the next ACAP meeting.

61. New Zealand presented paper CCSBT-ERS/1203/15, which describes research in the South African tuna joint venture fishery in 2010 to compare the performance of revised “hybrid” streamer lines deployed with weighted and un-weighted branchlines on two Japanese vessels. Weighted branchlines paired with hybrid streamer lines dramatically reduced seabird attacks, secondary attacks and seabird mortalities with little effect on fish catch. Four of 27 bird mortalities were on weighted branchlines – a reduction in seabird bycatch rate of 86 % compared to un-weighted branchlines. Mean tuna catch was near equal on the two branchline types, but weighted branchlines tangled on themselves three times more often than unweighted branchlines. No crew injuries occurred from either branchline type. The preliminary results indicate that the shrink and defend conceptual framework of seabird bycatch mitigation is effective and specifically, these results strongly suggest that two hybrid streamer lines together with weighted branchlines and night setting constitute best-practice.
62. New Zealand noted that, in conjunction with Birdlife International, it plans to trial the use of safe lead weights in its surface longline fishery to assess their effect on fish catches as well as their safety for fishers and that it anticipated the results of the trials would be presented to a future meeting of the ERSWG.
63. ACAP presented paper CCSBT-ERS/1203/Info06, which provided the meeting with a summary of the outcomes of a review of seabird bycatch mitigation measures for pelagic longline fisheries conducted by ACAP's Seabird Bycatch Working Group (SBWG). This review concluded that a combination of weighted branchlines, bird scaring lines and night setting are best practice mitigation in pelagic longline fisheries. These measures should be applied in high risk areas to reduce the incidental mortality to the lowest possible levels. Other factors such as safety, practicality and the characteristics of the fishery should also be recognised. Currently, no single mitigation measure can reliably prevent the incidental mortality of seabirds in most pelagic longline fisheries. The most effective approach is to use the above measures in combination.
64. The meeting noted the considerable progress in recent years on mitigation research for pelagic longline fisheries and that there was also a range of relevant research currently underway. The meeting recommended that the Extended Commission note those results when deciding future bycatch mitigation measures, especially with respect to new or improved mitigation measures, including line weighting and hybrid tori lines.

5.2 Sharks

5.2.1 Information on stock status

65. Japan presented paper CCSBT-ERS/1203/22rev1, a standardised CPUE analysis for the blue shark, shortfin mako shark and porbeagle shark in the SBT longline fishery over the period 1992-2010. While there were some fluctuations, remarkable increasing or decreasing trends of standardised CPUE for the three species were not observed. Moreover, distinct changes of body length composition are not recognised. These data do not indicate significant changes of stock status for these species from 1992 to 2010.

66. The meeting noted that as the catch composition for all three species was mainly juvenile sharks, the time series did not necessarily provide information or trends in adult shark populations.
67. Japan presented paper CCSBT-ERS/1203/23rev1, which provides a description of the tag and release of the pelagic shark species in the SBT longline fishery RTMP over the period 1998-2010. Thirty-four tags (26 blue sharks and 8 porbeagles) were returned. Ratio of recapture was 0.9 %. The longest time at liberty is 1738 days and the longest migration is 6900 km, both of them were blue sharks, which suggest the large scale migration of blue shark.
68. Japan presented paper CCSBT-ERS/1203/24, which describes the distributional pattern and the trend of relative abundance of porbeagle (*Lamna nasus*) in the Southern Hemisphere. It pointed out the common occurrence of this species in the pelagic ocean and indicated the possible connectivity of this species in the Southern Hemisphere. Preliminary results of standardised CPUE based on the Japanese logbook data suggested that the relative abundance of this species in the Southern Hemisphere was relatively stable between 1994 and 2011 with some fluctuation.
69. Based on the wide distribution, the necessity for the international coordination across the oceans for the effective management of the Southern Hemisphere population was suggested.
70. Japan noted that the stock status of porbeagle shark in the Southern Hemisphere was unknown and that given its widespread capture in SBT fisheries, likely stock distribution across the boundaries of several RFMOs, and its relatively low level of focus for the Southern Hemisphere population in other RFMOs, it was a priority candidate for ecological risk assessment by the ERSWG.
71. The meeting discussed undertaking a stock assessment for porbeagle shark and agreed that data would be required from all Members and CNMs and that such an assessment should be part of the future ERSWG work program. The meeting recommended that Japan, New Zealand and Australia work together to progress a stock assessment/ERA for porbeagle shark in advance of the next ERSWG meeting.
72. New Zealand introduced paper CCSBT-ERS/1203/13, an indicator-based analysis of key shark species in the WCPFC area, prepared by the SPC-OFP and previously presented to the WCPFC SC. Longline and purse seine logsheet and observer datasets held by SPC were examined to assess the stock status of eight WCPFC key shark species. Both longline and purse seine logsheet datasets suffer from missing shark catch records and a lack of species-specific recording, therefore the indicator analysis was based on observer data only. Shark status indicators in four main classes were assessed: range based on fishery interactions, catch composition, catch rates and biological indicators of fishing pressure (e.g. median size, sex ratio).
73. New Zealand introduced paper CCSBT-ERS/1203/14, a status snapshot of key shark species in the western and central pacific area, prepared by the SPC-OFP and previously presented to the WCPFC SC. The document synthesises all of the shark assessment work completed to date under the Western and Central Pacific Fisheries Commission's Shark Research Plan and discusses existing and potential

conservation and management measures for sharks. The current state of eight of the WCPFC's key shark species in the Western and Central Pacific Ocean is summarised. Various measures implemented to reduce shark mortality due to fishing are examined including the existing WCPFC shark measure and alternative measures applied by WCPFC Members in national waters. Measures currently applied by other regional fisheries management organisations are evaluated and conclusions regarding status of the stocks and effectiveness of current management measures are presented.

74. New Zealand clarified that the intention in presenting the papers is to highlight the progress that has been made on a spatial RFMO basis in understanding fishery/shark interactions and to develop the discussion around what this means for future CCSBT ERS reporting. New Zealand further noted that although the advice in the two papers covers areas where SBT are not caught, the format of reporting includes information which is directly relevant to stock status in areas where SBT fishing occurs.
75. The meeting noted that the papers were a particularly useful summary of the status of key shark species in the WCPFC area and very relevant to the work of the ERSWG. The meeting considered that for some of the shark species, such analyses were likely adequate for providing advice to the Extended Commission.
76. The meeting agreed that the summary reporting of shark status provided in CCSBT-ERS/1203/14 (e.g. Figure 1) was a particularly useful way of succinctly reporting stock status. The concept of identifying key spp. (similar to CCSBT-ERS/1203/Info10) may be helpful in focusing future reporting and work.
77. The meeting noted that to improve reporting on shark stock status, a key requirement remained improved data reporting for sharks, and in particular data which were recorded at the species level.

5.2.2 Information from other fisheries of relevance

78. No papers were presented specific to this agenda item and discussion on this topic is covered in other sections of the ERS report.

5.2.3 Ecological risk assessment

79. The meeting noted that WCPFC had completed ERA work for some shark species and that this would be a useful source of information for the ERSWG.
80. The meeting briefly discussed ERA for sharks and in doing so noted that a brief review of sharks in SBT fisheries is required which:
 - Identifies the range of species captured;
 - Briefly summarises the information sources/data available for the species; and
 - Classifies species as appropriate for ERA at levels one (qualitative expert-based), two (simple quantitative) or three (complex quantitative).

Such a review would identify which work the ERSWG should pursue and which information could be used from other RFMOs (noting that the meeting had identified porbeagle shark as a priority species for the ERSWG within this framework).

5.2.4 Future analyses to obtain improved estimates of ERS mortality and estimates of uncertainty

81. The meeting noted that the discussions on improving estimates of ERS mortality and estimates of uncertainty contained in paragraph 53 were equally applicable to sharks.

5.2.5 Update on mitigation research and priorities

82. No papers were presented specific to this agenda item.

5.3 Other ERS

83. The meeting discussion on all sub-items of agenda item 5.3 focussed on turtles unless otherwise noted.

5.3.1 Information on stock status

84. Japan presented paper CCSBT-ERS/1203/25, which describes Japanese activities on conservation and management of leatherback turtles in West Papua, Indonesia. Large number of leatherback turtles is known to nest in Jamursba-medi and Wermon, Papua, Indonesia. Nest counts, assessment of hatching success, and improvement of nesting environments for leatherbacks have been conducted in Indonesia with the collaboration of the Indonesia Sea Turtle Research Center and Everlasting Nature of Asia, which is a Non-Profit Organisation (NPO) in Japan. Sea turtle populations have been affected by many factors on land and at sea. Therefore, holistic management is necessary for the conservation of sea turtles, especially leatherback turtles.
85. The meeting noted the earlier presentation at agenda item 2.1 by New Zealand of CCSBT-ERS/1203/11 which summarises the capture of seabirds, marine mammals and turtles in New Zealand.
86. Australia noted the information provided in documents CCSBT-ERS/1203/Info15 to CCSBT-ERS/1203/Info22 inclusive that covered risk assessment and management across all ERS in relevant Australian fisheries.

5.3.2 Information from other fisheries of relevance

87. No papers were presented specific to this agenda item and any discussion on this topic is covered in other sections of the ERS report.

5.3.3 Ecological risk assessment

88. The meeting noted that while there did not appear to be a global clearing house for data on the range and distribution of turtle species, such as Birdlife manages for data on albatrosses and petrels, there may be benefit in seeking the assistance of IOSEA-Turtles (the Indian Ocean and South East Asian Turtle Memorandum of Understanding), as well as the FAO and other relevant RFMOs which have

management responsibility for high seas fisheries. The meeting also noted the ERA on turtles completed by the WCPFC. The meeting further noted that if species tracking data are available then a level 2 ERA could be undertaken, otherwise a level 1 ERA is probably all that can be undertaken. In this regard, it was suggested that ICCAT may be in the process of undertaking, or about to undertake an ERA for turtles.

89. The meeting recommended that the Secretariat contact IOSEA-Turtles with a view to assessing what data it holds and how it might assist any future work of the ERSWG.

5.3.4 Future analyses to obtain improved estimates of ERS mortality and estimates of uncertainty

90. No papers were presented specific to this agenda item and any discussion on this topic is covered in other sections of the ERS report.

5.3.5 Update on mitigation research and priorities

91. The meeting discussed the priority of further work on turtles relative to other ERS and noted that a reasonable next step would be to review the ERA conducted by WCPFC and other data sources at the next ERSWG meeting. The Chair noted that ERA work on turtles is also being planned by ICCAT and the results of this may also be of use to the ERSWG.

5.4 Predator and prey species that may affect the condition of the SBT stock

92. Japan presented CCSBT-ERS/1203/26 which provides prey species of the age-1 SBT in southern Western Australia where the trolling recruitment monitoring program conducted. Pilchard, jack mackerel and blue mackerel were identified major prey species with a large inter-annual variation of its composition. The author stressed the importance of SBT prey study in terms of effect not only on SBT recruitment stock but also on the monitoring.
93. New Zealand noted that it had continued its work on sampling of SBT stomachs as reported in CCSBT-ERS/0602/08 and that it will report updates of that work to a future meeting.
94. The Chair noted that several Australian projects are working to develop improved ecosystem models and that this work may offer potentially useful tools and outputs for future ERSWG meetings. Australia advised it was willing to provide further information on this modelling work as it becomes available.
95. The Chair noted that information collection requirements of CCSBT-ERS/1203/BGD01 are covered by existing statements of data requirements but that there was no consensus among Members of the Extended Commission as to whether SBT farming should be considered by the ERSWG.

Agenda Item 6. ERS activities in CCSBT Strategic Plan or tasked by the CCSBT

6.1 Data provision requirements for ERS

96. The Secretariat provided a summary of the aspects of the CCSBT Strategic plan relevant to ERS. It noted that there were two high priority tasks:
- That all Members and CNMs implement the Recommendation to mitigate the impact on ERS of fishing for SBT.
 - Agree on data provision requirements for ERS that ensure full reporting of bycatch and mitigation measures used in each fishery.
97. The Meeting noted that these two high priority tasks had been addressed at this meeting.

6.1.1 Observer data

98. Australia presented CCSBT-ERS/1203/16 which notes the need for a regional observer program as critical to the provision of robust data that will enable the ERSWG and Scientific Committee to monitor fishing activity interactions with ERS, assess the risk due to SBT fishing and evaluate the effectiveness of mitigation measures. The paper includes a revised draft proposal for a regional observer program and work plan for implementing priority measures. The revised draft incorporates feedback on the previous scoping study (CCSBT-SFMWG/1103/BGD01) and draft proposal presented at the Extended Commission meetings in 2010 and 2011.
99. Australia noted that implementation of a regional observer program will be a key component in meeting the current reporting requirements on ERS, elements of the CCSBT performance review, the CCSBT Strategic Plan and the CCSBT Recommendation to Mitigate the Impact on ERS of Fishing for SBT. Australia further noted that there is substantial value in agreement on the key minimum data requirements for ERS.
100. The meeting noted that improvements to the collection of data by observers and reported to the ERSWG (CCSBT-ERS/1203/16) would be valuable.
101. ACAP presented a brief summary of CCSBT-ERS/1203/Info/07 which has been prepared to assist the ERSWG to identify the minimum data collection requirements necessary to improve the CCSBT's understanding of SBT fishery impacts on seabirds and to assess the efficacy of the mitigation measures currently being used. The paper also identified data that are considered ideal to record and would contribute to a better understanding of the nature of bycatch and especially the factors that influence bycatch rates.
102. One of the paper's key recommendations was that explicit protocols for the reporting of seabird bycatch and associated data should be developed and implemented. ACAP noted that it was currently developing such protocols and would be pleased to provide these to ERSWG10.
103. The meeting noted that in relation to observer coverage levels, the use of electronic monitoring systems had been shown to be effective in other fisheries, and may be a useful and cost effective tool to complement observer coverage for

specific issues on board vessels. The Working group requested Members and CNMs to provide further detailed information on these monitoring systems to its next meeting.

104. Australia advised that it had undertaken work in trialling the use of electronic monitoring, and that reports on its research and implementation of electronic monitoring are available at <http://www.afma.gov.au/managing-our-fisheries/data-collection/data-collection-programs/#emon>
105. ACAP proposed the creation of an electronic monitoring research program involving researchers from various fleets, to target specific ERS issues, and advised it was interested in talking to relevant parties in the intersessional period in this regard.
106. The Secretariat noted that a Global Environment Fund (GEF) supported research program on tuna fisheries is being finalised and that a component of that program involves investigation of electronic monitoring techniques.
107. CCSBT-ERS/1203/27 reports that Japanese activities about improvement of Japanese scientific observer program on the pelagic longline fisheries. The improvement is mainly required in the quality of identification of seabirds based on newly developed species classification. These updates will be used for the analysis to determine bycatch hotspots and shall be provided to other countries.
108. The Working Group recommended that Birdlife International, ACAP, Members and CNMs collaborate to develop protocols for the improved identification of seabirds.
109. The meeting agreed that there was a need to develop a set of minimum requirements for observer data, taking into account the potential for harmonisation across RFMOs. It recommended that this work be performed intersessionally. The Meeting requested that the Secretariat facilitate the intersessional discussion.

6.1.2 Data exchange

110. The Secretariat noted that agreement on data provision requirements for ERS was a task included in the Strategic Plan and that CCSBT17 had also recommended that consideration be given to a data exchange in advance of the current ERSWG meeting.
111. The Secretariat advised that work on a proposal for an ERS data exchange had commenced intersessionally in consultation with the Chair of the ERSWG, but that Members did not reach consensus to develop a proposal intersessionally.
112. The Meeting agreed that work should continue on development of protocols for an ERS data exchange, and that this work should be held intersessionally with the intention that further discussion could be held during the margins of CCSBT19.

6.2 Template for reporting ERS interactions to the CCSBT Compliance Committee

113. The Secretariat presented CCSBT-ERS/1203/04, which describes the current reporting requirements of the Compliance Committee (CC) and Extended

Commission in order to assist the ERSWG to fulfil the CC's request that the ERSWG review the ERS reporting requirements of the CC and provide recommendations to improve compliance reporting.

114. The Secretariat also noted that in the annual reports to this meeting of the ERSWG, no Member had provided information on the level of compliance with mitigation measures as is required in the template for annual reports to the ERSWG.
115. The Meeting had no changes in reporting requirements to recommend, but noted that more efforts should be made to provide all information contained within the template for annual reports to the ERSWG.

6.3 Recommendations on the provision of data to spatially based RFMOs

116. The Meeting noted that while the Secretariat does not hold a significant amount of ERS data, any non-confidential data is contained within reports to the various meetings of CCSBT and are already publicly available upon request to the Secretariat.
117. The Meeting requested that the Secretariat offer to provide the Joint Tuna RFMO Technical Working Group on Bycatch with any information that it considers relevant to its work.

6.4 Assessment of mitigation measures adopted by other RFMOs

6.4.1 Review seabird mitigation measures that Members/CNMs are expected to implement in accordance with the 2008 Recommendation on Ecologically Related Species

118. The Secretariat presented paper CCSBT-ERS/1203/05 which provided details of the relevant seabird, shark and sea turtle mitigation measures of CCSBT, ICCAT, IOTC and WCPFC. The Secretariat advised that CCSBT-ERS/1203/Info08 from the IOTC Secretariat also provided recommendations on best practice for seabird mitigation from IOTC's recent Scientific Committee meeting that are not included in CCSBT-ERS/1203/05. The meeting also noted relevance of several papers presented under agenda item 5.1, including CCSBT-ERS/1203/Info06 (Review of Seabird Bycatch Mitigation Measures for Pelagic Longline Fisheries).
119. The meeting concluded that, taking into consideration the importance of factors such as safety, practicality and the characteristics of the fishery, the emerging scientific consensus was that a combination of line weighting, night setting and bird scaring lines was considered best practice to reduce seabird bycatch to the lowest level. It also noted that ICCAT had recently adopted Supplemental Recommendation 11/09 requiring that vessels fishing south of 25 degrees South to use two out of those three measures; approved line weighting regimes are greater than 45 g within 1 metre (m) of the hook, greater than 60 g within 3.5 m of the hook, and greater than 98 g within 4 m of the hook, and ICCAT has also agreed on different specifications of bird scaring lines for vessels of less than 35 m and those 35 m or larger.
120. The meeting also noted that the recommendation from the 2011 meeting of the IOTC Scientific Committee (CCSBT-ERS/1203/Info08) had recommended

changes – yet to be considered by the IOTC – on seabird mitigation issues. The recommendation was similar to those adopted by ICCAT and also consistent with the advice from ACAP. This advice will be presented to WCPFC in 2012.

121. Japan presented paper CCSBT-ERS/1203/20 which summarised developments relevant to ERS in ICCAT, IOTC, WCPFC and CCSBT, and focussed on the period 2009 to 2011. It noted that a range of work has occurred for a variety of ERS, including the conduct of several ERAs, the introduction of new or improved mitigation measures for several ERS, and several reviews of new scientific data on the distribution of ERS and their conservation status.
122. The meeting highlighted that research results on new or improved mitigation measures and related issues are rapidly being produced and that iterative review processes to take account of that information are now occurring in some RFMOs. Such iterative processes are important for the uptake of those research findings in new and improved bycatch mitigation measures.
123. The meeting noted all effective mitigation measures should be seen as an adaptive management response to the seabird bycatch problem. For example, continued refinement of line weighting configurations (mass, number and position of weights and materials) through controlled research and monitored application in fisheries, is highly desirable to find configurations that are the most safe, practical and effective. The recommended regimes should be implemented in working fisheries, monitored through observer programs, and reviewed and modified if found to be inadequate in reducing bycatch to acceptable levels.
124. The meeting recommended that further work should be done to determine what data needs to be collected and reported to monitor bycatch and assess the effectiveness of mitigation measures as discussed in more detail under agenda items 2 and 5.1. ACAP's paper CCSBT-ERS/1203/Info/07 contains a list of essential and desirable data to be collected, and would provide a good starting point for these discussions.

6.4.2 Consideration of whether any additional or different measures may be required while fishing for SBT

Seabirds

125. The meeting agreed that the current scientific advice on what constitutes best practice mitigation measures is to use all three mitigation measures, namely line weighting, night setting (i.e. setting after nautical twilight and before nautical dawn) and bird streamer lines.
126. For line weighting, the weighting should be similar to that adopted by ICCAT and recommended by IOTC SC and ACAP – at least 45 g attached within 1 m of the hook, at least 60 g attached within 3.5m of the hook and at least 98 g attached within 4 m of the hook. The meeting noted that a new Australian regime, as identified at paragraph 58 (40 g at the hook) has faster sink rates than these above measures. The meeting also recognised the importance of locating weights near to the hook to achieve faster branch line sink rates. CCSBT-ERS/1203/15 also suggested consistency of sink rates is another important factor.

127. Japan noted that the joint research conducted by Japanese and US researchers (see CCSBT-ERS/1203/15) had concluded that all three measures were required for high risk areas if the goal is to reduce bycatch to the lowest possible level. Thus, the need for all three measures relates in part to what level of bycatch reduction is desired and there may be situations where all three measures are not required.
128. The meeting noted the need for new ideas to come through from fishers in particular and the importance of encouraging them to continue to develop improved measures.
129. The meeting noted that the need to adopt effective mitigation measures was urgent given the threatened and declining population status of many of the seabirds taken incidentally in SBT fisheries. In this regard, the meeting agreed that, currently, no single mitigation measure can reliably prevent the incidental mortality of seabirds in pelagic longline fisheries. The meeting recognised that all three measures should be applied in high risk areas, to reduce the incidental mortality of seabirds to the lowest possible levels. The meeting recognised that other factors such as safety, practicality and the characteristics of the fishery should also be recognised. The meeting agreed that it was also important to regularly review new monitoring and research data and on the basis of such review to refine mitigation measures as required.
130. The meeting noted that the migratory movement of many seabirds spanned the entire range of SBT fishing and beyond, and that this was much wider than the narrower spatial mandate of fishing managed by ICCAT, IOTC and WCPFC. Given the spatial range relevant to CCSBT, consistent definitions and specifications of mitigation measures (e.g. as these relate to weights, areas, etc) and requirements about their use across all of these areas were desirable to reduce the incidental mortality of seabirds to the lowest possible levels, and such consistency would practically assist fishers.
131. On the basis of concerns about seabird populations, continued reports of widespread and substantial captures of seabirds in SBT fisheries and the results of recent research reflected in the ACAP advice on best practice, the meeting recommended to Extended Commission that implementation of more effective mitigation measures based on best practice is urgently required.

Sharks

132. In considering the need for any additional or different measures for sharks while fishing for SBT, the meeting noted that it had no new advice to provide.

Turtles/other ERS

133. In considering the need for any additional or different measures for turtles while fishing for SBT, the meeting noted that it had no new advice to provide.

Agenda Item 7. Education and public relations activities

7.1 Finalisation of updated CCSBT ERS pamphlets

134. The Secretariat provided a summary of CCSBT-ERS/1203/06 which outlined progress towards finalisation of updated CCSBT ERS Pamphlets. It advised that some intersessional work had been conducted and agreed on the Seabird and Shark Pamphlets and that the updated English versions of the pamphlets had been placed on the CCSBT website. It noted that there were still outstanding changes that required further discussion and recommendations were provided in the paper for resolution of these issues.
135. The Secretariat also advised that pamphlets on sea turtles had not been developed, but that links were provided on the CCSBT website to existing guides provided by WCPFC and FAO.
136. The Meeting considered the recommended changes to the Seabird and Shark pamphlets and agreed that the Secretariat should continue work on finalising the pamphlets intersessionally, noting that the pamphlets should be finalised as quickly as possible and that any requests to Members made by the Secretariat would be responded to within 21 days.

Agenda Item 8. Future work program

137. The program for future work was agreed, and is at **Attachment 5**.

Agenda Item 9. Other business

138. There was no other business.

Agenda Item 10. Recommendations and advice to the Extended Commission

139. The meeting made the following recommendations for consideration by the Extended Commission:
- That the format in **Attachment 4** be used for future Annual reports to the ERSWG (Agenda item 2.1).
 - That data reporting by Members and CNMs be standardised (as recommended at paragraphs 8 - 11) to allow better monitoring of the level of seabird bycatch and to allow approximate estimates of total seabird mortality in SBT fisheries to be made at future ERSWG meetings. The meeting further recommended that such reporting should be harmonised with other RFMOs to the extent possible (Agenda item 5.1.1).
 - That the ERA process identified in CCSBT-ERS/1203/09 be used by the ERSWG for seabirds in future (Agenda item 5.1.3)
 - That the Extended Commission note the considerable progress in recent years on mitigation research for pelagic longline fisheries when deciding future bycatch mitigation measures, especially with respect to new or improved

mitigation measures, including line weighting and hybrid tori lines (Agenda item 5.1.5)

- That the independent Chair be tasked with liaising with the Joint Tuna RFMO Bycatch Working Group on the issues identified in paragraphs 20,49,53,69 and 109.
- On the basis of concerns about seabird populations, continued reports of widespread and substantial captures of seabirds in SBT fisheries and the results of recent research reflected in the ACAP advice on best practice, the meeting recommended to Extended Commission that implementation of more effective mitigation measures based on best practice is urgently required (Agenda item 6.4.2)

140. The Meeting welcomed the facilitation of the ERSWG by the independent Chair and recommended to the Extended Commission that this support be continued.

Agenda Item 11. Conclusion

11.1. Adoption of meeting report

141. The report was adopted.

11.2. Recommendation of timing of next meeting

142. The meeting recommended that its next meeting be held in conjunction with the 2013 meeting of the Extended Scientific Committee and it be 3 to 4 days in duration.

11.3. Close of meeting

143. The meeting closed at 04:35pm, 30 March 2012.

List of Attachments

Attachment

1. List of Participants
2. Agenda
3. List of Documents
4. Template for the Annual Report to the Ecologically Related Species Working Group (ERSWG)
5. ERSWG Workplan

List of Participants
The 9th meeting of Ecologically Related Species Working Group

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Agenda
Ninth meeting of the Ecologically Related Species Working Group

1. Opening
 - 1.1 Adoption of the Agenda
 - 1.2 Adoption of Document List
 - 1.3 Appointment of Rapporteurs
2. Annual reports
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 - 2.2 Cooperating Non-Members
3. Review of relevant international instruments
 - 3.1 Review of the implementation of relevant international instruments
 - 3.2 Review and recommendations on other best practice guidelines
4. Reports of meetings of other organisations relevant to the ERS Working Group
 - 4.1 Recommendations of the Joint Tuna RFMO Technical Bycatch Working Group
 - 4.2 Regional Fisheries Management Organisations/Arrangements/ NGOs
5. Information and advice on ERS
 - 5.1 Seabirds
 - 5.1.1 Information on stock status
 - 5.1.2 Information from other fisheries of relevance
 - 5.1.3 Ecological risk assessment
 - 5.1.4 Future analyses to obtain improved estimates of ERS mortality and estimates of uncertainty
 - 5.1.5 Update on mitigation research and priorities
 - 5.2 Sharks
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 - 5.2.3 Ecological risk assessment
 - 5.2.4 Future analyses to obtain improved estimates of ERS mortality and estimates of uncertainty
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 - 5.3 Other ERS
 - 5.3.1 Information on stock status
 - 5.3.2 Information from other fisheries of relevance
 - 5.3.3 Ecological risk assessment
 - 5.3.4 Future analyses to obtain improved estimates of ERS mortality and estimates of uncertainty
 - 5.3.5 Update on mitigation research and priorities

- 5.4 Predator and prey species that may affect the condition of the SBT stock
6. ERS activities in CCSBT Strategic Plan or tasked by the CCSBT
 - 6.1 Data provision requirements for ERS
 - 6.1.1 Observer data
 - 6.1.2 Data exchange
 - 6.2 Template for reporting ERS interactions to the CCSBT Compliance Committee
 - 6.3 Recommendations on the provision of data to spatially based RFMOs
 - 6.4 Assessment of mitigation measures adopted by other RFMOs
 - 6.4.1 Review seabird mitigation measures that Members/CNMs are expected to implement in accordance with the 2008 Recommendation on Ecologically Related Species
 - 6.4.2 Consideration of whether any additional or different measures may be required while fishing for SBT
7. Education and public relations activities
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10. Recommendations and advice to the Extended Commission
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 - 11.1. Adoption of meeting report
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 - 11.3. Close of meeting

List of Documents

Ninth Meeting of the Ecologically Related Species Working Group

(CCSBT-ERS/1203/)

1. Provisional Agenda
2. List of Participants
3. List of Documents
4. (Secretariat) Current ERS reporting requirements for CCSBT Members and Cooperating Non-Members to the Compliance Committee (CC) and Extended Commission (EC)
5. (Secretariat) Relevant Tuna RFMO Measures Concerning Incidental Catches of Ecologically Related Species
6. (Secretariat) Finalisation of updated CCSBT ERS pamphlets
7. (ERSWG Chair) Chair's Report on the Joint Tuna RFMO Technical ByCatch Working Group Meeting
8. (Taiwan) Impacts of Taiwanese southern bluefin tuna fleet on seabirds in the southern Indian Ocean
9. (New Zealand) Ecological risk assessment of global fisheries for southern bluefin tuna
10. (New Zealand) Assessment of the risk to seabird populations from New Zealand commercial fisheries.
11. (New Zealand) Summary of the capture of seabirds, marine mammals, and turtles in New Zealand commercial fisheries, 1998-99 to 2008-09 (extract from report for Southern bluefin tuna fisheries)
12. (New Zealand) ACAP advice on best practice seabird mitigation measures for pelagic longline fisheries
13. (New Zealand) An indicator-based analysis of key shark species based on data held by SPC-OFP. S. Clarke, S. Harley and S. Hoyle.
WCPFC-SC7-2011/EB-P-01
14. (New Zealand) A status snapshot of key shark species in the western and central Pacific and potential mitigation options.S. Clarke.WCPFC-SC7-2011/EB-WP-04
15. (New Zealand) Preliminary Report of 2010 Weighted Branch-line Trials in the Tuna Joint Venture Fishery in the South African EEZ. E. Melvin, T. Guy and N. Sato. WCPFC-SC7-2011/EB-WP-08
16. (Australia) Revised Proposal for verifying Catch and Effort Data through a CCSBT Scientific Observer Program

17. (Australia) New branch line weighting regimes to reduce seabird mortality in the Australian pelagic longline fishery. Robertson, Candy and Hall.
18. (Japan) Assessment report on the implementation of Japan's National Plan of Action for the conservation and management of sharks of FAO (Fisheries Agency, Government of Japan)
19. (Japan) Assessment report on the implementation of Japan's National Plan of Action for reducing incidental catch of seabirds in longline fisheries (Fisheries Agency, Government of Japan)
20. (Japan) Review of international situation relevant to the ERS (Daisuke Ochi, Kotaro Yokawa, Hiroshi Minami)
21. (Japan) Estimation of incidental catch of seabirds in the Japanese southern bluefin tuna longline fishery in 2008-2010 (Hiroshi Minami, Yukiko Inoue)
22. (Japan) Standardized CPUE for the main pelagic shark species caught in the SBT longline fishery, 1992-2010 (Hiroaki Matsunaga, Yasuko Semba, Kotaro Yokawa)
23. (Japan) Tag and release of the pelagic shark species caught in the SBT longline fishery, 1998-2010 (Hiroaki Matsunaga)
24. (Japan) Distribution and temporal trend of standardized CPUE of porbeagle (*Lamna nasus*) in the Southern Hemisphere from Japanese research and logbook data (Yasuko Semba, Kotaro Yokawa, Hiroaki Matsunaga)
25. (Japan) Japanese activities on conservation and management of leatherback turtles (*Dermochelys coriacea*) in the West Papua, Indonesia (Hiroshi Minami, Hiroyuki Sukanuma)
26. (Japan) Diet of young southern bluefin tuna in the southwestern coastal waters of Australia in summer (Tomoyuki Itoh, Hans Kemps, John Totterdell)
27. (Japan) Improvement of bycatch data quality of Japanese scientific observer program (Yukiko Inoue, Kotaro, Yokawa, Hiroshi Minami)
28. (Japan) Guidance, extension and educational activities for reducing bycatch in longline fishery (Hiroshi Minami, Toshikazu Miyamoto, Toru Kitamura)

(CCSBT- ERS/1203/BGD)

1. (Japan) Draft Recommendation to the Extended Commission on interactions between ecologically related species with surface fisheries including SBT farming activities (*originally CCSBT-ERS/0707/22*)

(CCSBT-ERS/1203/Annual Report-)

Australia	Ecologically related species in the Australian Southern Bluefin Tuna Fishery 2009-2010
Fishing Entity of Taiwan	National Report of Taiwan: Ecologically Related

	Species in the Taiwanese Southern Bluefin Tuna Fishery 2009-2010
Indonesia	Annual Report to the Ecologically Related Species Working Group (ERSWG)
Japan	National report of Japan: overview of researches on ecologically related species in Japanese SBT longline fishery, 2008-2010
New Zealand	New Zealand Country Report: Ecologically Related Species in the New Zealand Southern Bluefin Tuna Longline Fishery
Republic of Korea	Annual Report of Korea to the 9th Ecologically Related Species Working Group
European Union	European Union's Annual Report to the Ecologically Related Species Working Group (ERSWG)

(CCSBT- ERS/1203/Info)

1. (Secretariat) Ecologically Related Species component of the CCSBT Strategic Plan
2. (Secretariat) Report of the International Workshop on Tuna RFMO Management of Issues Relating to Bycatch
3. (Secretariat) Report on Biology, Stock Status and Management of Southern Bluefin Tuna: 2011
4. (Birdlife International) The justification, design and implementation of Ecological Risk Assessments of the effects of fishing on seabirds
5. (ACAP) An update on the Status and Trends of Albatrosses and Petrels listed under Annex 1 of the ACAP Agreement
6. (ACAP) Review of Seabird Bycatch Mitigation Measures for Pelagic Longline Fisheries
7. (ACAP) Minimum data requirements for seabird bycatch
8. (IOTC Secretariat) An update on seabird discussions by the Indian Ocean Tuna Commission scientific community
9. (New Zealand) A proposal for a research plan to determine the status of the key shark species. S. Clarke and S.J. Harley. WCPFC-SC6-2010/EB-WP-01
10. (New Zealand) A Proposal for a Process for Designating WCPFC Key Shark Species for Data Provision and Assessment. S. Clarke. WCPFC-SC7-2011/EB-WP-05

11. (New Zealand) A progress report on the shark research plan. S. Clarke, S. Harley, L. Protoy and P. Williams. WCPFC-SC7-2011/EB-IP-01
12. (New Zealand) Estimation of Catch Rates and Catches of Key Shark Species in Tuna Fisheries of the Western and Central Pacific Ocean Using Observer Data. T. Lawson. WCPFC-SC7-2011/EB-IP-02
13. (New Zealand) Ecological Risk Assessment for seabird interactions in Western and Central Pacific longline fisheries. *Marine Policy*. doi:10.1016/j.marpol.2011.11. Waugh, S. M., Filippi, D. P., Kirby, D. S., Abraham, E., and Walker, N(2012).
14. (Australia) Estimation of seabird bycatch rates in the Eastern Tuna and Billfish Fishery. Lawrence, Giannini, Bensley and Crombie.
15. (Australia) Ecological risk assessment report for the Eastern Tuna and Billfish Fishery. Webb et al.
16. (Australia) Ecological risk assessment report for the Western Tuna and Billfish Fishery. Webb et al.
17. (Australia) Ecological risk assessment report for the Southern Bluefin Tuna Fishery. Hobday et al.
18. (Australia) Ecological risk management report for the Eastern Tuna and Billfish Fishery. AFMA.
19. (Australia) Ecological risk management report for the Western Tuna and Billfish Fishery. AFMA.
20. (Australia) Ecological risk management report for the Southern Bluefin Tuna Fishery. AFMA
21. (Australia) Rapid quantitative risk assessment for fish species in selected Commonwealth fisheries. Zhou, Smith and Fuller (2007).
22. (Australia) Rapid quantitative risk assessment for fish species in seven Commonwealth fisheries. Zhou, Fuller and Smith (2009).
23. (Australia) Effect of line shooter and mainline tension on the sink rates of pelagic longlines and implications for seabird interactions (2010) 20 Aquatic Conservation: Marine and Freshwater Ecosystems 419. Robertson, Candy and Wienecke.
24. (Australia) Experimental determinations of factors affecting the sink rates of baited hooks to minimize seabird mortality in pelagic longline fisheries (2010) 20 Aquatic Conservation: Marine and Freshwater Ecosystems 632. Robertson, Candy , Wienecke and Lawton.
25. (Australia) Progress report on the development and testing of the underwater bait setter for pelagic longline fisheries. Robertson and Phil.
26. (Japan) Review of the Japanese RTMP observer program in the high sea waters in

2008, 2009 and 2010 fishing years (Osamu Sakai, Hiroshi Minami, Daisuke Tokuda, and Osamu Abe)

27. (Japan) Distribution of seabird bycatch at WCPFC and the neighboring area of the southern hemisphere (WCPFC-SC7-2011/EB-WP-07) (Yukiko Inoue, Kotaro Yokawa, Hiroshi Minami, Daisuke Ochi, Noriyoshi Sato, Nobuhiro Katsumata)
28. (Japan) Preliminary report of 2010 weighted branch-line trials in the tuna joint venture fishery in the South African EEZ (WCPFC-SC7-2011/EB-WP-08) (E. Melvin, T. Guy, N. Sato)
29. (ERSWG Chair) Bycatch governance and best practice mitigation technology in global tuna fisheries. Eric L. Gilman.
30. (HSI) A Compendium of Conservation and Management Measures to address the impacts of species bycatch in tuna RFMOs
31. (HSI) HSI Report to the Ninth meeting of the Ecologically Related Species Working Group

(CCSBT-- ERS/1203/Rep)

1. Report of the Eighteenth Annual Meeting of the Commission (October 2011)
2. Report of the Sixth Meeting of the Compliance Committee (October 2011)
3. Report of the Special Meeting of the Commission (August 2011)
4. Report of the Seventeenth Annual Meeting of the Commission (October 2010)
5. Report of the Fifth Meeting of the Compliance Committee (October 2010)
6. Report of the Sixteenth Annual Meeting of the Commission (October 2009)
7. Report of the Fourteenth Meeting of the Scientific Committee (September 2009)
8. Report of the Eighth Meeting of the Ecologically Related Species Working Group (September 2009)
9. Report of the Seventh Meeting of Ecologically Related Species Working Group (July 2007)
10. Report of the Sixth Meeting of Ecologically Related Species Working Group (February 2006)

**Template for the
Annual Report to the Ecologically Related Species Working Group (ERSWG)**

(From the ERSWG 9 meeting.)

1. Introduction
 - General comments on fishing methods by which southern bluefin tuna is caught in party fisheries (by fleet, area, and time).
 - General comments on type and magnitude of ERS caught by fishery/method.
2. Review of SBT Fisheries
 - Fleet size and distribution (brief summary of trends)
 - Distribution of Catch and Effort (Summary of catch and effort by area and fleet)
3. Fisheries Monitoring for Each Fleet
 - Summary of recent observer coverage of SBT fisheries fleets and summary of data collection activities of observers.
 - Summary of data collection activities from non observed activities.
4. Seabird¹
 - Summary of cpue and total numbers of seabird incidentally caught by area and fleet and list of numbers of each seabird species observed caught².
 - Summary of seabird capture from non observed sources².
5. Other Non-target Fish¹
 - Summary of cpue and total numbers of shark and the predominant non-target fish species by area and fleet².
6. Marine Mammal and Marine Reptile¹
 - Summary of total numbers of marine mammal and marine reptile incidentally caught².
7. Mitigation Measures to Minimise Seabird and Other Species Bycatch

Current Measures

 - Mandatory Measures for Each Fleet
 - Description of each measure
 - Compliance Monitoring System (i.e. how is compliance measured)
 - Level of Compliance for each measure
 - Voluntary Measures for Each Fleet
 - Description of each measure
 - Proportion of fleet using each measure and how this proportion was determined

Measures under Development/Testing

 - Description of each measure being developed and tested
 - Lead agency undertaking research
 - Description of any collaboration
 - Results to date
 - Planned development/testing for next year
 - Expected completion date and report to ERSWG

¹ This information should also be provided by species (including the scientific name) wherever possible.

² ERSWG 9 recommended that Members and Cooperating Non-Members should include the information shown in Table 1 of this reporting template in future national reports to the ERSWG.

8. Public Relations and Education Activities

Public Relations Activities

- media releases
- information booklets, posters, other written material
- video
- public presentations
 - trade shows
 - forums, conference
 - school/university group

Education

- crew training, especially ship masters
- trainee fishers
- engineers
- managers
- observers

Information Exchange

- research
- educational materials
- other regional fisheries organisations
- international organisations
- non-member states and entities
- review of new ideas obtained from crew debriefings or ship fishing reports

9. Information on other ERS (non-bycatch) such as prey and predator species

10. Others

- Information obtained concerning ERS related fishing activities of non-party fleets.

11. Implementation of the IPOA-Seabirds and IPOA-Sharks

- A description of activities undertaken for the implementation of NPOAs as they relate to SBT fisheries. The emphasis should be on updates and recent activities.

Annex 1 – Summary of papers submitted to ERSWG

Members should provide a summary of papers submitted to the ERSWG meeting in their national report

CCSBT 9 specified that Members should provide a summary of papers submitted to the ERSWG meeting in their national report (see paragraph 89 of the CCSBT 9 report).

Table 1: Reporting form for estimation of total mortality of ERS in CCSBT fisheries

Country _____ Year (calendar year) _____

Species (or group) _____

Fishery		Observed							Estimate
Stratum (CCSBT Statistical Areas or finer scale)	Total Effort ³	Total Observed Effort ³	Observer Coverage ⁴	Captures (number)	Capture Rate ⁵	Mortalities (number)	Mortality Rate ⁵	Live releases (number)	Estimated total mortalities (number)
TOTAL									

3 For longline provide number of hooks, for purse seine provide number of sets.

4 For longline provide as a percentage of the number of hooks, for purse seine provide as a percentage of the number of shots.

5 For longline provide as captures per thousand hooks, for purse seine provide as captures per set.

ERSWG Workplan

The work plan of the ERSWG between ERSWG9 and the next meeting of the group is specified below. The action items have been grouped in accordance with tasks specified in the CCSBT Strategic Plan.

CCSBT Strategic Plan			
Tasks in the CCSBT Strategic Plan	Priority	Time-frame	Action items in the ERSWG workplan
Implement the Recommendation to Mitigate the Impact on ERS of Fishing for SBT ¹	High	2010-11	<ul style="list-style-type: none"> • Secretariat to obtain new information on seabirds likely to be caught in fisheries from ACAP and Birdlife International (including population status summaries and reviews of mitigation measures) in advance of ERSWG meetings. • New Zealand to update the CCSBT seabird ERA to include global tracking data from Birdlife International prior to the next ERSWG meeting. • Members were encouraged to develop papers on ERA for non seabird species (in particular sharks) caught in SBT fisheries prior to next ERSWG meeting. • Japan, New Zealand and Australia to work together on a stock assessment for porbeagle sharks in advance of the next ERSWG meeting. • The Secretariat to contact IOSEA-Turtles with a view to assessing what data it holds and how it might assist any future work of the ERSWG.
Review the implementation of the Recommendation on ERS	Medium	Ongoing	
Agree on data provision requirements for ERS that ensure full reporting of bycatch and mitigation measures used in each fishery; this could occur through other RFMOs (e.g. WCPFC, IOTC) if they have appropriate protocols in place for ERS data reporting.	High	2011 then Ongoing	<ul style="list-style-type: none"> • Members to report ERS catches to the next ERSWG meeting with appropriate stratification and in accordance with new standardised format agreed at ERSWG9. • Members will undertake intersessional discussion to develop an agreement concerning the exchange of ERS data by CCSBT 19. The Secretariat will coordinate the discussion. • Develop a set of minimum requirements for observer data, taking into account the potential for harmonisation across RFMOs. It recommended that this work be performed intersessionally. The Secretariat will facilitate the intersessional discussion Birdlife International and ACAP to collaborate with Members and Cooperating Non-Members to develop protocols for the improved identification of seabirds. • Members to provide further details on electronic monitoring systems in advance of the next ERSWG meeting.

¹ Implementation of the ERS Recommendation includes The Extended Commission and/or its subsidiary bodies undertaking an assessment of the risks to ecologically related species posed by fishing for southern bluefin tuna.

CCSBT Strategic Plan			
Tasks in the CCSBT Strategic Plan	Priority	Time-frame	Action items in the ERSWG workplan
Assess how well the mitigation measures adopted by other area-based RFMOs mitigate the risks caused by fishing	Medium	2012	<ul style="list-style-type: none"> • Considered at ERSWG9 and to be a standing item on future ERSWG meetings.
Where necessary, identify and adopt additional mitigation measures to manage risk taking into account the coordination and harmonisation with other RFMOs	Medium	2012	<ul style="list-style-type: none"> • To review information on mitigation measures as they become available. • Members are encouraged to conduct experiments to identify new mitigation measures or improve existing mitigation measures that may be effective in reducing bycatch of ERS. • Secretariat to update its paper on ERS mitigation measures of other tuna RFMOs in advance of future ERSWG meetings. • Members are encouraged to exchange information and collaborate between Members and with NGOs for effective and smooth implementation of mitigation measures.
Coordination and harmonisation with area-based RFMOs, including on data reporting (see above)	Medium	Ongoing	<ul style="list-style-type: none"> • ERSWG Chair to follow up with the Coordinator of the Joint Bycatch Technical Working Group (JBTWG) on progressing the work of that group. • The Secretariat to provide JBTWG participants with any publicly available information, including papers submitted by Members to the ERSWG, that they seek. • Subject to endorsement by the Extended Commission, approach the other tuna RFMOs with an offer to lead global work on assessment of impacts of fishing for tunas on seabirds and porbeagle sharks.
Instruct the ERSWG to monitor predator and prey species which may affect the condition of the SBT stock and report its findings to the Commission	Medium	2013	<ul style="list-style-type: none"> • Members to provide relevant papers for consideration at the next ERSWG meeting. New Zealand will report on its stomach content work with updated data from 2006.
Action items not specified in Strategic Plan			<ul style="list-style-type: none"> • Secretariat to finalise the revised ERS pamphlets for seabirds and sharks, including translating to Member languages. • Birdlife International, ACAP, Members and CNMs collaborate to develop protocols for the improved identification of seabirds