

Commission for the Conservation of  
Southern Bluefin Tuna



みなまぐろ保存委員会

**Report of  
The Eleventh Meeting of the Ecologically  
Related Species Working Group**

**3-6 March 2015  
Tokyo, Japan**

## Eleventh Meeting of the Ecologically Related Species Working Group

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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.
2. Each delegation introduced its participants. The list of participants is at **Attachment 1**.
3. Mr Hisashi Endo (Japan) welcomed participants to Japan and provided opening remarks for the meeting.

#### ***1.1. Adoption of agenda***

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

#### ***1.2. Adoption of Document List***

5. The list of documents presented to the meeting is at **Attachment 3**. The Chair noted that some documents were submitted after the due date for the meeting. The meeting agreed to accept these late documents.

#### ***1.3. Appointment of Rapporteurs***

6. Participants from ACAP<sup>1</sup>, Japan, New Zealand and the WCPFC<sup>2</sup> volunteered to rapporteur agenda item 4. Australia volunteered to rapporteur agenda item 5.2, and BirdLife International to rapporteur agenda item 5.3. The Secretariat rapporteured the remainder of the meeting.

### **Agenda Item 2. Annual reports**

7. The Secretariat noted that the annual reports submitted to the meeting showed continued improvement from previous meetings. The most common gaps in reports when compared to the agreed annual reporting template included not reporting:
  - Summaries of captures from sources other than observers;
  - Whether any voluntary mitigation measures are being used;
  - The level of compliance with mitigation measures; and

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<sup>1</sup> Agreement on the Conservation of Albatrosses & Petrels.

<sup>2</sup> Western & Central Pacific Fisheries Commission.

- Details of information exchanges.
8. The meeting recommended that the Secretariat provide feedback to individual Members where reports were not consistent with the reporting template.

### ***2.1. Members***

9. Annual reports from all Members were tabled and Members responded to questions of clarification that were raised by other Members and observers.
10. General items arising during the discussion included:
  - A Member expressed serious concern with the high level of bycatch in some Member fleets, particularly given some long standing mitigation measure obligations required by other RFMOs. Clarification was sought on efforts to improve bycatch rates, and implementation of these obligations into national laws, noting that New Zealand's report presented a good example of useful detail on this issue.
  - It was explained that the level of bycatch rate in Japan's analysis of its seabird data has remained unchanged.
  - For some Members, the implementation of new mitigation measures from July 2013 and July 2014 (corresponding with the new mitigation requirements of ICCAT, IOTC<sup>3</sup> and WCPFC) is expected to result in reduced sea bird bycatches and that this will hopefully be seen in future reports to the ERSWG.
  - It is important that bycatch data collection be of consistently high quality amongst all Members. Many Members are collecting such high quality data and others are improving the quality of data they collect. Nevertheless, some Members expressed concern that a lack of identification or reporting of seabirds at the species or population level by some Members may be masking the ability to identify the impact of southern bluefin tuna fisheries on some bird species or populations. It was reiterated that reporting by all Members should be at the species level. Photography is seen as a valuable tool to aiding accurate identification. DNA analysis of feather samples is seen as another important tool in achieving accurate identifications. These tools were further discussed under agenda item 4.1.5 when the report of the Effectiveness of Seabird Mitigation Measures Technical Group (SMMTG) was considered.

### ***2.2. Cooperating Non-Members***

11. The Chair advised that the European Union's annual report declared a zero catch of Southern Bluefin Tuna (SBT) during 2013 and that consequently, the impact of fishing by the European Union as a consequence of SBT fishing on ERS bycatches was zero.
12. South Africa tabled its annual report to the ERSWG. The meeting was pleased to receive a report from South Africa and a Member expressed particular interest in the bird limits that South Africa implements on a per vessel basis.

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<sup>3</sup> Indian Ocean Tuna Commission

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

13. The IOTC Secretariat introduced papers CCSBT-ERS/1503/19 and Inf01 which collated information which were considered most relevant to the current activities of the ERSWG, including the following topics:

- Active IOTC Conservation and Management Measures relevant to the ERSWG;
- Seabirds: IOTC technical workshops for the implementation of measures to reduce seabird bycatch in IOTC longline fisheries (Resolution 12/06);
- Sharks:
  - Indian Ocean Shark Year (multi-year research) Program (IO-ShYP),
  - National Plans of Action (NPOA) – Sharks;
- Regional Observer Scheme: Capacity building workshop series to support progress on the implementation of the IOTC Regional Observer Scheme (Resolution 11/04).

14. The ERSWG11 noted that at the 11th Session of the IOTC Working Party on Ecosystems and Bycatch (WPEB10) (held in October 2014) made the following comments relevant to the ERSWG11 discussions on seabirds:

*“204. The WPEB RECOGNISED the trans-oceanic nature of many seabird species, which necessitates evaluation of mitigation effects across ocean basins and through collaboration with other tRFMOs,*

*205. NOTING that there are analogous processes underway in other fora, such as CCSBT and ICCAT, to investigate appropriate methods to review the efficacy of seabird bycatch mitigation measures, the WPEB AGREED that there is value in developing and maintaining linkages between these, and that outputs of the CCSBT seabird workshop (November 2014) should be considered in the process to develop IOTC’s seabird assessment.*

*206. The WPEB NOTED the establishment of the CCSBT Effectiveness of Seabird Mitigation Measures Technical Group to provide advice on optimal approaches for measuring and monitoring the effectiveness of seabird bycatch mitigation measures in southern bluefin tuna longline fisheries.*

*207. The WPEB NOTED that for the first time, it was informed that the CCSBT was holding a technical working group meeting on the effectiveness of seabird mitigation measures, from 4–6 November 2014 in Tokyo, Japan, and the suggestion that this working group should be the lead on assessing the effectiveness of seabird mitigation measures across tRFMOs. However, as this group operates under the CCSBT rules of procedure, the meeting documents and reports are not in the public domain and therefore not accessible for all IOTC CPCs.*

*208. The WPEB AGREED that if meetings are held to discuss issues such as the evaluation of seabird mitigation measures in the Indian Ocean, the IOTC WPEB Chair, Vice-Chair, SC Chair and IOTC Secretariat should be present, and that material discussed and reported be placed in the public domain, so that all IOTC CPCs can follow the process in a transparent manner.*

209. *The WPEB AGREED that the development of a seabird portal for information sharing through the IOTC website would be useful to support collaborative research efforts.*

210. *RECOGNISING that most participants of the WPEB are experts in fisheries rather than seabirds, the WPEB AGREED that there was a need for collaborations with seabird specialists to fully investigate the impact of the mitigation measures and to make the best use of the available data.”*

15. The meeting noted the Report of the Seventh Meeting of IOSEA<sup>4</sup> Signatory States that was provided as CCSBT-ERS/1503/Info 02.
16. The Secretariat reported the outcome of joint tuna RFMO bycatch working group meeting on harmonisation of longline observer data in January 2015. The meeting was attended by the tuna RFMOs, Birdlife International, ACAP, and Taiwan with the main purposes being to summarise the data fields collected in existing observer programs, provide a forum on possible future data exchanges, answer common issues on observer data, and identify data gaps. The report for the meeting is yet to be finalised but some preliminary conclusions were presented to the meeting. These included:
  - Considering the possibility of a centralised repository of observer data for tuna RFMOs, or at RFMO level as the second best option;
  - Share observer data summaries among tuna RFMOs in a format similar to the ERSWG data exchange template, as well as observer coverage statistics to form a type of data catalogue;
  - A table of best practice guidelines for observer data collection, in the context of data sharing, to be considered by tuna RFMOs for inclusion into minimum observer data standards;
  - Perform analyses to estimate optimal observer coverage rates by fleet; and
  - Use global identifiers for vessels and similar identifiers for observers and fishing masters.

The final report will be more detailed than the draft preliminary report, although being one of the first meetings of this type and being informal in nature, some topics will need to be investigated further and with expertise from relevant experts, such as identifying the important variables collected by observers with respect to scientific analyses.

17. There was considerable interest and discussion among the group with respect to the process leading up to the working group meeting, the expected outcomes of the final report, the possible sharing of data amongst tuna RFMOs, and future work in this area. It was agreed that the meeting was important and the process needs to continue. In particular it was hoped that there would be more detail in the report, particularly identifying individual data fields to be collected by observers, noting that the meeting report has not been completed and that more work is required in a scientific context for this to be achieved. The Secretariat will circulate the final report to ERSWG participants once it becomes available.
18. It was noted that Members were not given much notice before the meeting and as such had little opportunity to provide input to it, which they would like the

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<sup>4</sup> Indian Ocean – South-East Asian Marine Turtle Memorandum of Understanding.

opportunity to do for future meetings of this nature. Members should be notified of any future activities of the joint meeting.

19. It was agreed that the best practice guidelines should be considered at future meetings but this should not delay current work on modifying the observer standards. As a general principle, if there is any new material in the future then the CCSBT should review its observer standards against that material.
20. Japan introduced paper CCSBT-ERS/1503/Info 10, the report of the ICCAT 2014 Inter-Sessional Meeting of the Sub-Committee on Ecosystems. Especially, the topic relating to the ecosystem based fishery management could be referred when CCSBT ERS discuss about future plan. Those are; In reviewing the progress that has been made globally in implementing ecosystem based fisheries management, the subcommittee was presented with an update on the integrated ecological assessment of the Gulf of Mexico ecosystem. Through the experiences of this group, it was recognised that implementation of a management system is facilitated by marrying clear management objectives for elements of an ecosystem with indicators that reflect the state of the system as well as the pressures on it. This philosophy is consistent with that of the subcommittee which has indicated in past sessions the need for clear management objectives from the Commission in order to advance the implementation of the EBFM approach. In order to expedite the process, the subcommittee developed management objectives for four basic elements that ICCAT would have the capacity to manage and it was proposed that they be vetted at the next annual meeting of the Standing Work Group for between Science and Managers in 2015. The impact of environmental factors on the distribution of highly migratory species was demonstrated to the subcommittee through the association between the phases of the Atlantic Multi-decadal Oscillation and the trajectory of relative abundance indices of North Atlantic Swordfish. This analysis stressed the importance of involving environmental variables in the assessments when appropriate and the need to be able to organise the data by geographic area rather than flag.
21. It was noted that ICCAT's assessment of its sea bird mitigation measures commences in 2015 and will be discussed at a meeting in June 2015 and that ICCAT had identified the need to define best practise for calculating bycatch rates and extrapolation to total mortality. The meeting considered it useful for the results of the SMMTG meeting to be communicated to ICCAT.
22. The Executive Secretary advised that, with the ERSWG's support, he will seek the Extended Commission's approval to provide the SMMTG report to ICCAT and the other tuna RFMOs. The Executive Secretary further noted that the CCSBT's rules on release of meeting reports made it difficult to collaborate effectively on ERS matters with the other tuna RFMOs and that he would be providing a recommendation to the Extended Commission for earlier release of ERSWG meeting reports.
23. The ERSWG agreed that under current CCSBT Rules and Procedures, the timeframe for its reports becoming public can prevent their timely use by similar working groups of other RFMOs and recommended that earlier release of ERSWG meeting reports be supported, particularly as ERSWG meetings are often out of phase with meetings of the Extended Commission.

24. The Chair tabled the Annual WCPFC report on the Joint Tuna RFMO Bycatch Technical Working Group (WCPFC-SC10-2014/EB-WP-03) as a summary of progress by this joint working group. It was noted that all Members were at the WCPFC meeting where this paper was originally presented.

#### **Agenda Item 4. Information and advice on ERS**

##### ***4.1 Seabirds***

###### *4.1.1 Information on stock status*

25. ACAP presented a report on the status and trends of species of seabirds likely to be caught in the SBT fishery. At its second meeting in September 2014, ACAP's Population and Conservation Status Working Group examined the current (1993-2013) global trends of species listed under the Agreement. Of the 18 species of albatrosses with distributions that overlap with the SBT fishery, the International Union for Conservation of Nature (IUCN) lists two as Critically Endangered (CR), five as Endangered (EN), six as Vulnerable (VU) and five as Near Threatened (NT). Of the seven ACAP petrel species with distributions that overlap with the SBT fishery, the International Union for Conservation of Nature (IUCN) lists four are listed as VU, one as NT and two as Least Concern (LC).
26. The IUCN status of two albatross species has changed since ERSWG 10 in 2013. The Black-browed albatross *Thalassarche melanophris* has been down-listed from EN to NT, and the Grey-headed albatross *Thalassarche chrysostoma* has been up-listed from VU to EN. Both of these changes were based on improved knowledge, rather than genuine improvement or deterioration in status.
27. Japan commented on the importance of this information and asked for clarification on the sources of information used in the review. ACAP explained that the estimates were derived by seabird scientists and reviewed by ACAP. Data is submitted to the ACAP Secretariat's database over time however there are gaps in relation to intermittent data.
28. Japan also asked questions of the potential drivers behind some of the population trends described in the paper. ACAP stated that it would not be possible to assess the relative effect of individual drivers for most species because of the lack of information and number of potential variables involved such as disease and predation. ACAP also confirmed that drivers differ across the various species and it is often difficult to monitor the impact of individual fisheries because there is seabird bycatch in trawl as well as longline fisheries. Based on the differences across species, ACAP reminded Members of the importance of capturing data such as feather samples that can be used for DNA analysis.
29. Japan commented on the difficulty in identifying increases when determining trends. ACAP confirmed this and pointed to the lack of information on some breeding sites. ACAP also confirmed that, in some cases, it may take years to see a trend. New Zealand agreed that monitoring of sites is often a costly and logistically demanding exercise especially in the case of remote sites. This further reinforces the need for better observer information and other tools such as DNA analysis.

#### 4.1.2 *Information from other fisheries of relevance*

30. There was no discussion on this agenda item.

#### 4.1.3 *Ecological risk assessment*

31. The Secretariat presented paper CCSBT-ERS/1503/04 which provided a summary of the level and distribution of SBT effort by longline and purse seine vessels in order to assist in highlighting risk to ecologically related species. The summaries presented were from three data sources held by the Secretariat, none of which were optimal for bycatch assessments and each has its limitations. The data sources were:

- Official SBT catch data – 5x5 degree SBT catch raised to official catch estimates, which could be used as a proxy for SBT effort;
- Catch and Effort data – 5x5 degree effort data with high coverage, but contains effort not considered as SBT effort for ERS purposes; and
- ERSWG Data exchange effort data – ERS defined effort but only by statistical area and for 2010-2013.

The paper contains tables and distribution maps by year for each of the data sources. All of the datasets were missing some data from Indonesia and from most Cooperating Non-Members.

32. The Secretariat reminded the group that no analysis was done on the information presented and it is intended for information purposes and to generate discussion. The Secretariat also described some of the constraints and assumption relating to the three data sources used in the paper.
33. Indonesia asked the Secretariat why there was no Indonesia data presented for some of the figures in the report since 2007. The Secretariat explained that the catch data used in the report is submitted using a 5 degree by 5 degree spatial scale and unfortunately the Indonesian submission was done using alternative spatial measures, such as port of landing, which did not allow it to be incorporated. The Secretariat has also not received catch and effort data from Indonesia. Finally, the Secretariat stated that issues existed with the Indonesian submission of ERS data and stated that it would look to work directly with Indonesia in order to resolve them. Indonesia thanked the Secretariat for its intention to resolve this issue and requested technical assistance in order to facilitate strengthening of Indonesia's national observer program.
34. Taiwan suggested that captions be added to the figures in the future to interpret the number of hooks, number of sets, etc.
35. Japan asked if there was information available on catches outside of CCSBT statistical areas and the Secretariat confirmed that some Members provide fleet-wide data regardless of whether or not SBT was caught. However, ERS data differs in that it relates only to data relating to events where SBT was caught or targeted and is therefore more focused in that sense.
36. Birdlife International asked which of the databases was best and what improvements could be made. The Secretariat stated that interpretation of effort in CCSBT's "catch and effort" dataset is currently hampered as it encompasses more effort than that which relates to SBT. The new "ERS" dataset contains the



most meaningful effort information but it currently lacks the resolution required and would therefore benefit from better spatial and temporal data submission. The ERSWG recommended that the CCSBT should prepare a brief description of the availability and resolution of fishing effort data, including an explicit statement of the assumptions used in raising that data. Options for improving effort data should also be outlined. CCSBT should request that the other tuna RFMO Secretariats provide similar summaries.

37. New Zealand highlighted the importance of effort data and its role in the risk assessment. New Zealand also reminded Members of the fact that the uncertainty created by the use of catch as a proxy for effort has been previously identified as an issue by the ERSWG and other CCSBT bodies. New Zealand suggested that the provision of effort data at higher resolution levels would help in many analyses, and reduce the uncertainty in such analyses and asked Members to consider such a change. Australia confirmed that it would be willing to provide higher resolution data.
38. Members agreed that the ERS data exchange was a significant improvement and thanked the Secretariat for its presentation on the data submitted to date.
39. New Zealand presented an update on progress on a CCSBT-wide seabird ecological risk assessment since ERSWG10. Several methodological developments have occurred in the related New Zealand seabird ecological risk assessment. In particular substantive progress has been made on approaches to estimate absolute risk (c.f. relative risk), one of the key challenges in the previous CCSBT-wide seabird ecological risk assessment. The improvements also allow assessment of risk across all fishing methods rather than just surface longline. New Zealand is progressing the seabird ecological risk assessment in a three phase approach, with the first phase including some of the CCSBT fisheries (those that occur within the WCPFC area), and all in the second phase (a southern hemisphere seabird ecological risk assessment). New Zealand seeks contributions to this work in the form of understanding of key catch effort data sets, support for access to key data sets, and interpretation of observer data where available.
40. New Zealand noted that considerable progress has been made to date and that the focus now should be on the next steps in the process. With that in mind, New Zealand asked that Members consider providing additional data for the various phases described in the paper. New Zealand also encouraged Members to collaborate in the planned work.
41. Australia thanked New Zealand for its work to date and offered its assistance with the details of that contribution to be discussed outside of ERSWG.
42. ACAP also offered to help New Zealand by providing some of its existing contacts particularly in South America.
43. New Zealand also noted that it will need to work beyond the tuna RFMOs as well for other fishing (i.e. trawl and purse seine) data.
44. Japan asked what New Zealand's motivation is behind this challenging work also pointing to similar work being undertaken by other RFMOs. New Zealand responded that the work done was in direct relation to feedback from previous ERSWG meetings. The work is also aimed at addressing issues discussed at ERSWG 10 such as those relating to the use of catch as a proxy and the need for

absolute risk assessment rather than relative risk to prioritise resources and improve responses.

45. New Zealand also made the point that the risk assessment can be used as a way to draw attention to areas where there is a shift in risk status (refer to figure 5 of paper). This has been done domestically and has been incorporated into the domestic management advice. New Zealand now feels that this same tool would be useful at an RFMO level.
46. The Chair highlighted that there is a need to make assumptions about bycatch in other fleets so this work will help with our own assessments. New Zealand noted that bycatch rate estimates will be improving as ERS data exchange improves in conjunction with better observer coverage. In the case of the risk assessment, those improvements will reduce uncertainty surrounding the “vulnerability” parameter. Equally, population trends will also help improve the confidence in other parameters in the model.

#### *4.1.4 Estimates of ERS mortality and associated uncertainty*

47. The Secretariat presented the paper CCSBT-ERS/1503/06 which contained summaries of observed and estimated total number of ERS mortalities from data provided by Australia, Japan, Korea, New Zealand, and Taiwan through the CCSBT ERSWG Data Exchange.
48. The Secretariat noted that while some Members provided data at the species level others provided it at a higher taxonomic level allowed by the template, and the lowest common denominator taxonomy was then adopted for the summaries. Since various FAO codes, English names and scientific names were reported, the Secretariat recommended that these be standardised in future. In response to a suggestion that the summaries include a plot of bycatch rates show time trends (especially as data accumulate year by year), the Secretariat noted these have been prepared and will be added to the summaries.
49. Although some Members noted that the data should be reported at the most detailed level of taxonomy possible, other Members suggested that they are already reporting at the lowest possible taxonomy level and further improvement would be difficult. The difficulty of species identification is still an issue, for example the identification between Amsterdam albatross and wandering albatross (juvenile) is very difficult, which had been discussed in IOTC meeting. One Member noted the improvement of species identification should be addressed before the analysis using lowest taxonomic level data.
50. It was noted that the total number of mortalities summary statistics represent summaries of the Members’ simple extrapolation of observed mortalities to totals. This approach results in the loss of spatial and temporal (seasonal) information from the raw data and could bias the assessment of risk. More sophisticated extrapolation methods and analyses, including regional analyses, would be possible if the unsummarised data can be shared for collaborative assessment. However it was noted that the difference of the mortality between fleets should be considered in aggregating these data.
51. Members discussed the spatial and temporal scale of data required for ERS assessment. It was noted that:

- Some advice is required on a species by species basis so fine-scale taxonomic data are required but species identification issue should be addressed;
  - Risk may vary both spatially and temporally so the data used for the analyses need to be capable of reflecting these variations;
  - It may be useful to partition mortalities into ‘set mortalities’ or ‘haul mortalities’ in order to better assess whether mitigation measures should be strengthened; and
  - Despite the preference for fine scale data for in-depth analyses, there is also value in monitoring trends in aggregated data, as this can be done annually with relatively little effort.
52. Japan presented CCSBT-ERS/1503/17 which provided an estimation of annual incidental catch of seabirds in Japanese Southern Bluefin Tuna longline fishery in 2013. Annual seabird bycatch were 2,862 (95% CI: 1,257-4,964) in 2013. As a whole, estimates of seabird bycatch have been showing decreasing trends since 2000. Recent estimates of seabird bycatch by the Japanese high-sea SBT longline fishery were approximately 1,000-4,000 birds/year.
53. In response to a question about the interpretation of the high point estimate of seabird bycatch numbers in 2006 and its subsequent decline thereafter, the following issues were considered:
- 13 vessels were observed in 2006 but only three had very high catches of seabirds;
  - Other stratification schemes, such as seasonal strata, could be considered in future analyses;
  - The primary seabird mitigation measures used through 2013 were tori poles (but additional measures have been subsequently implemented);
  - The decline since 2006 could be due to a number of factors including changes in vessels or fishing operations, sampling bias or a decrease in the seabird population;
  - A Member noted that model-based approach, taking proper account of zeros and explanatory variables should be considered and the author answered the lacking data were complemented from other year; and
  - Bycatch rates, as well as the total bycatch number, should be examined over time.
54. On the basis of the papers and discussion, ERSWG11 recommended that:
- In order to standardise taxonomic reporting, codes for seabird taxonomic groups (e.g. FAO code) and species should be formally agreed; and
  - While the analysis of aggregated data may be useful for some purposes, opportunities for collaborative analysis of detailed data should be pursued in order to take account of spatial and temporal variability and to appropriately reflect this variability in the specification of mitigation measures.

#### *4.1.5 Assessment of mitigation measures*

55. The Secretariat tabled paper CCSBT-ERS/1503/05 which provided an updated summary of the current seabird, shark and sea turtle mitigation measures of

CCSBT, ICCAT, IOTC and WCPFC. It was noted that a few measures from IOTC and WCPFC that have limited relevance to SBT fisheries were omitted from the summary and that they will be added to a revised version.

56. ACAP presented CCSBT-ERS/1503/13, which reports on a review of seabird bycatch mitigation measures for pelagic longline fisheries that was conducted in September 2014 at the sixth meeting of the Seabird Bycatch Working Group Meeting (SBWG6). The review reiterated the advice provided to ERSWG 10 that a combination of weighted branch lines, bird scaring lines and night setting are best practice mitigation in pelagic longline fisheries and that these measures should be applied in areas where fishing effort overlaps with seabirds vulnerable to bycatch to reduce the incidental mortality to the lowest possible level. One substantive change has been made to ACAP's best practice advice to reflect that side setting has been shown to be an effective bycatch mitigation measure in the North Pacific, although it was noted that further studies were required to show that this measure would be effective in Southern Hemisphere fisheries where different aggregations of seabirds are found. ACAP highlighted that a combination of mitigation measures is required as no single measure will be effective. Referring to CCSBT-ERS/1503/14 ACAP reiterated that its advice on weighted branch lines remains unchanged. ACAP reported that there have been further research developments in relation to the weighting of branch lines, however further studies are required before these findings can be incorporated into ACAP's best practice advice. In order to facilitate this process the SBWG formulated a three-step research plan that comprises the following steps: 1) statistical analysis of existing sink rate data to categorise various weighting configurations according to their sink rates; 2) review of the papers underpinning the existing ACAP advice, including taking account of the criteria for best practice and the type of seabird assemblages within which the previous studies were conducted; and 3) carrying out further collaborative field research on the relationship between sink rate configurations, identified in step 1, and resulting seabird mortalities and/ or seabird attack rates.
57. The SBWG also endorsed a proposal for comprehensive testing of line weighting configurations and devices to provide robust advice on the potential for different weighting configurations to cause fly-back injuries, and to identify configurations and handling practices for ACAP recommended branch line weighting configurations that optimises safety.
58. Korea noted that it is implementing branch line weighting investigated by joint work of Birdlife International and Korean SBT longline vessel in the Indian Ocean (45g lumo lead on the hook). Japan stated that it encourages and expects their fisheries to improve the safety and effectiveness of the branch line weighting. In response to a question about the possible effect of weighted branch lines on target species, ACAP noted that no such effect has been documented, however, if large numbers of seabirds are present bait will be lost and target catches will be lower as a result.
59. Japan presented CCSBT-ERS/1503/16 which provided a review of seabird bycatch from 1996-2013 in Japanese scientific observer data. The bycatch occurred mainly off South Africa and western Indian Ocean. The bycatch rate was low in the Tasman Sea, probably because the occurrence of the petrels were fewer than that in other areas. Also, the bycatch rate was low in the first quarter

but the data was limited. The number of seabirds around the vessel in setting positively affected the seabird bycatch rate. When the seabird around the vessel was relatively large, the bycatch rate both with night setting and blanch line were much lower than the seabird bycatch rate without those mitigation measures. It was suggested that night setting and branch line weighting seem to have strong effect for the reduction for the bycatch rate in the Japanese commercial fishery. The result also indicated number of seabirds gathering around the vessel during gear setting as well as seasonal and spatial effect influenced on the bycatch rate which should be considered in the analysis of bycatch data.

60. Several Members welcomed the model-based approach to explaining seabird bycatch rates by season and area, and by the presence of large numbers of seabirds around the vessel at the time of setting. In response to a question, Japan clarified that the presence of seabirds around the vessel during setting was assigned as a category of high or low by the observer on a trip by trip basis, rather than a set by set basis. This was considered by Japan that the seabird distribution at small scale is very patchy and would be different from the distribution at large scale and thus the small scale analysis should be done. What constituted high or low was judged by the observer based on their experience. Several Members noted that the presence of large numbers of seabirds around the vessel during setting could simply mean that there are more seabirds available to be hooked, or, as shown in previous studies, it could be that these situations create behavioural disturbances that increase the probability of hooking. As an alternative to the method used, one Member suggested that background data on seabird density from Birdlife International be combined with information from the observer to calibrate high and low levels of flocking around the vessel. Some Members also suggested that this type of analytical approach be expanded to other fleets which have a time series of data (for example, Korean & Taiwanese fleet, and Japanese vessels fishing in New Zealand waters). Other suggestions included plotting the year effect estimated by the model over time to assess the trend; including time of day of the set as an explanatory variable in the model to assess the effect of night setting; and including vessel, hooks per basket and the hook number (distance from float) as explanatory variables.
61. The ERSWG discussed the recommendations from the SMMTG which were summarised in paragraphs 10-30 of the Report of the SMMTG meeting (CCSBT-ERS/1503/Rep01). These recommendations were supported by the ERSWG with some modifications. The agreed recommendations are at **Attachment 4**.
62. A recommendation related to the development of two linked preliminary project proposals. These were to be finalised by Birdlife International prior to submission for funding as additional components under Birdlife International's component of the ABNJ Tuna Project. One proposal was aimed at capacity development for the analysis of seabird data. The other was aimed at a joint tuna RFMO workshop to progress assessment across tuna RFMOs (See **Attachment 5**). The ERSWG endorsed these proposals as a potentially effective way to evaluate effectiveness of seabird conservation measures, facilitate the assessment of cumulative impacts, and improve skills that could be applied to a range of other bycatch species.
63. The meeting considered the future of the SMMTG and noted that it has successfully addressed its terms of reference and that future work that is still

needed will be picked up by other processes including projects under the ABNJ Tuna Project, work of the ERSWG and possible future joint work of the tuna RFMOs. The Chair thanked Japan for initiating and hosting this group and Birdlife International for its support of the meeting, including co-funding, drafting the scoping paper and co-Chairing the meeting. The ERSWG also thanked all participants of the SMMTG for their contributions to its valuable work.

64. The Chair noted that the participation of independent experts on the SMMTG was particularly valuable. The meeting agreed that the value of independent experts to meetings should be added to the ERSWG's comments on the Performance Review recommendations.
65. ACAP suggested that its bycatch data review group could use the work of SMMTG and asked the ERSWG to agree to have the information presented at its next meeting. The group agreed, but the Secretariat noted that availability of the report would depend on the outcome of the request that the Extended Commission approve the release of the report prior to CCSBT 22.

#### *4.1.6 Recommend mitigation measures applicable to CCSBT Vessels*

66. The ERSWG has not changed its advice with regards to seabirds and reiterates its advice in paragraphs 125, 129 and 131 of the ERSWG 9 report.
67. Members noted that new mitigation measures requiring two out of the three measures that constitute ACAP best practise advice had started in the Atlantic in 2013, and in the Indian Ocean and the Western and Central Pacific Ocean in July 2014. These measures are applied to tuna fisheries in their respective area of each tuna RFMO including SBT fishery.

#### *4.2 Sharks*

68. New Zealand briefly presented CCSBT-ERS/1503/11, which is the latest revision to its National Plan of Action for the Conservation and Management of Sharks (NPOA – Sharks). The NPOA – Sharks has been revised since the last meeting of the ERSWG and the changes to shark finning practices were discussed as part of the New Zealand national report. Although the shark finning changes drew the most attention both domestically and internationally, New Zealand also highlighted the objectives relating to the use of a risk management framework similar to that which is found in the New Zealand National Plan of Action on Seabirds. As with seabirds, New Zealand will be focusing on the domestic framework initially but would like to see future work done on a regional level.
69. Japan asked for clarification as to whether this would capture shark abundance beyond New Zealand waters. New Zealand confirmed that it would in the case of highly migratory shark species.
70. Japan also pointed to the WCPFC analysis taking place for a number of species and asked whether New Zealand would like to see the CCSBT undertake a risk assessment approach similar to seabirds. Once again New Zealand confirmed that this was a goal in the case of some highly migratory sharks.

#### 4.2.1 Information on stock status

71. Dr Shelley Clarke made a presentation on Shark Indicators for New Zealand's Tuna Longline Fishery related to CCSBT-ERS/1503/21. Indicator analyses were conducted for blue, porbeagle and mako sharks which are the three primary shark species taken as bycatch in the New Zealand tuna longline fishery. The main data sources were the Ministry for Primary Industries (MPI) commercial catch-effort database for the 2005 to 2013 fishing years, and the MPI observer database for the 1993 to 2013 fishing years. The following indicators were calculated: high-CPUE (the proportion of half-degree rectangles having unstandardised catch per unit effort (CPUE) greater than a specified threshold); proportion-zeroes (the proportion of half-degree rectangles having zero reported catches in a fishing year); geometric mean index (the geometric mean of the species abundances in catches, for both the catch of all species including teleosts, and the catch of just the three sharks); standardised CPUE (for both commercial and observer data); proportion of males in the catch; and median lengths of males and females. None of the indicators for the period 2005–2013 suggested that any of the shark species were declining and some of the indicators suggested positive trends for all three species. Although there are a number of important caveats, especially relating to data quality and availability, and goodness of model fit in the CPUE analyses, the results provide no evidence that the stocks of blue, porbeagle and mako sharks in New Zealand waters have been adversely affected by fishing at the levels experienced since 2005.
72. TRAFFIC thanked the authors for their work and asked how low the porbeagle stock had declined and the reasons behind this decline. New Zealand noted that it could not answer that question to the extent desired without having conducted a full stock assessment. There were however concerns about the porbeagle observer dataset utility for this assessment as it does conflict with the other two sets of data analysed and the standardised model could not achieve a good fit to the data.
73. Taiwan queried why there were differences between the New Zealand domestic and Japanese charter fleets in the level of catch in the South Island region. New Zealand explained that the two fleets operate very differently with the Japanese fleet generally operating further south and offshore from its domestic counterparts. The two fleets also have different catch rates. New Zealand also reminded Members that more detailed information on bycatch and scale of the fisheries involved could be found in Table 6 of its country report.
74. Japan commented that the paper CCSBT-ERS/1503/18 is simple update of previous document (CCSBT-ERS/1203/24) including the most recent year's data. Japan has collected the catch and effort data of porbeagle (*Lamna nasus*) caught by Japanese distant-water longliners since 1994. For the basic information on the stock assessment of the porbeagle caught in the SBT fishery, log-book data of porbeagle caught in the southern hemisphere as well as the size data collected in the scientific observer program for SBT was summarised. Considering the distribution area of porbeagle in the southern hemisphere, the calculation of logbook data was conducted for the area south of 30°S. Total of 30,892 porbeagles were recorded in the logbook data between 1994 and 2013. Total of 13,725 porbeagles were recorded in the observer program between 1992 and 2013 and size data from 11,378 individuals were available. The distribution of

catch and size data on spatial and temporal scale is described in this document. The detailed information of Japanese data for porbeagle was already published in the Journal of Marine and Freshwater Research (64, 518-529, 2013) by Dr. Yasuko Semba.

75. WCPFC asked for clarification on the large CPUE area in the very southern waters of the Pacific. This is an area with very low effort which could be the reason for the result. It may be that although the catch of porbeagle was low, it gives a relatively high CPUE figure based on the very low levels of effort involved.
76. New Zealand was also curious about the cluster of high CPUE east of NZ waters in high latitudes of the Pacific (around 160 West) and thought it worthy of investigation to determine whether it is an indication of biological traits of the stock. Japan suggested that it could be a migration or distribution effect and that it would be good for cooperative works with Members in future.
77. New Zealand presented an update on progress on a porbeagle shark stock status assessment since ERSWG 10. Porbeagle remains a high priority for stock status assessment in the Pacific Ocean and globally in the southern hemisphere generally. An initial analysis of porbeagle shark stock status has been completed for some components of the Southern hemisphere stock (the WCPFC area (by August 2015) and the New Zealand EEZ). To develop this work further, and make it more comprehensive, a revised approach to joint assessment of porbeagle shark stock status is proposed.
78. The intersessional group discussed and agreed that to complete a comprehensive full stock range analysis, there is a need to progress the work across the other potential data sets. Essentially the remaining gaps are the eastern Pacific, the Indian Ocean and the South Atlantic, and then a synthesis across the Southern hemisphere. Accordingly, as a next step, the group recommended requesting that the ABNJ Tuna Project Technical Coordinator-Sharks and Bycatch progress this work with the ERS group, and across the joint tuna RFMOs. Doing this work through the ABNJ Tuna Project should allow a first global assessment for the southern stock of porbeagle (whereas working as ERS alone, we are unlikely to obtain access to all the required data sets).
79. The group noted that data contributions from all ERS participants would be an important part of that work. Data contributions from New Zealand and Australia have already been confirmed for such an approach. Other countries outside the CCSBT have also informally indicated support for such an approach. Accordingly, to support a whole of stock status assessment for porbeagle sharks, the intersessional group recommended that the ERSWG:
  - Request that the ABNJ Tuna Project Technical Coordinator-Sharks and Bycatch progress this work with the ERS group, and across the joint tuna RFMOs; and
  - ERS Members make available all relevant data holdings to such a project.
80. The Chair asked whether the WCPFC representative, who is also the ABNJ Tuna Project Technical Coordinator-Sharks (TC-Sharks) could provide additional background on the way forward with this work. The TC-Sharks confirmed that the first step would be for this group to make a request for ABNJ Tuna Project to lead the porbeagle assessment. One of the three components identified for the



shark components of the ABNJ Tuna Project is to conduct four pan Pacific stock status assessments. A porbeagle assessment would qualify for one of those studies and could therefore secure time and resources. Contact has already been made with a number of countries including the European Union who wish to take part.

81. The Chair asked whether this work will go beyond the Pacific and the TC-Sharks confirmed that it would.
82. Japan made enquiries on the level of collaboration that would be involved, including whether the assessment would be conducted by a service provider or under a collaborative workshop approach. New Zealand noted that the work would be led by the TC-Sharks but there would be ample opportunities for Members to input.
83. Japan's preference is for a collaborative approach and it would prefer to not simply provide the data, but also to participate in the work in order to contribute to it and to take the capacity development opportunities for Japanese scientists.
84. The TC-Sharks clarified that although the shark project does not have funding for a workshop, it could consider other means, such as on-site analysis or externally funded workshops, as a means of collaboration.
85. The Chair reiterated that Japan possesses very useful data that it could contribute towards this stock assessment and that work should continue to find an appropriate mechanism to access it. The group agreed to formally approach the ABNJ Tuna Project (via the Chair) and for Members to contribute data where they can.
86. Japan reminded Members of the upcoming ICCAT and IOTC shark working group meetings and the potential to raise this issue in those fora. Noting that the TC-Sharks would be attending those meetings, participants agreed that it would be beneficial if the proposal is discussed at those meetings and suggested that a letter from the Chair be used to formalise this approach.
87. The TC-Sharks asked whether Taiwan and Korea could provide an update on the status of the initial information request made and their respective willingness to provide access to data.
88. Taiwan stated that it typically has low catch rates for this species based on the offshore and more northerly areas in which their fleet operates but that it would like to take part and provide what information it has.
89. Korea stated that it has captured this type of information from observer reports since 2010 and also logbook data since 2012 and that it would be willing to collaborate on this project with that information.
90. A question was raised by Korea as to what mechanisms would be in place to feedback to the group. The TC-Sharks replied that it was flexible and willing to take guidance from the group on the most appropriate means of keeping Members informed. Following the request from this group, the TC-Sharks would then develop a proposed work plan that would be distributed to this group. New Zealand suggested that Members put forward an individual point of contact for this particular project to facilitate cooperation.

#### *4.2.2 Information from other fisheries of relevance*

91. There were no specific papers presented under this agenda item.
92. New Zealand made the general comment that the shark indicator analysis discussed earlier this meeting involved other fisheries of relevance and it remains important to look beyond SBT fisheries for information.

#### *4.2.3 Ecological risk assessment*

93. No papers were submitted under this agenda item.

#### *4.2.4 Estimates of ERS mortality and associated uncertainty*

94. This agenda item was largely covered as part of the Secretariat's summary from the data exchange. New Zealand reiterated the need for reporting at a species level for sharks as well as other ERS species to improve estimates of ERS mortality.

#### *4.2.5 Assessment of mitigation measures*

95. Australia summarised CCSBT-ERS/1503/info5 which reviews the most studied methods for mitigating shark mortalities. The paper notes the concern about the impact of pelagic longline fisheries on the status of shark populations and the need for mitigation measures to reduce mortality. Despite these concerns, progress in research and implementation of bycatch mitigation measures for sharks has lagged behind measures for other bycatch species such as seabirds. While not exhaustive, the review identified that the three most promising approaches to mitigating mortality of sharks from pelagic long lines are hook type (circle) leader type (monofilament) and best practice handling at the vessel. From a technical viewpoint there is often sufficient information in the literature to allow reasonably informed decisions on reducing shark mortality using these approaches. The paper also highlights issues that have hampered studies of mitigation and particularly quantifying the magnitude of likely reduction in mortality.
96. The Chair thanked Australia for its paper and asked why some of the measures were described as only promising in light of some of the other existing research that clearly demonstrated their effectiveness. Australian clarified that there is good evidence of effectiveness for some of these measures, such as wire leaders, and that the uncertainty relates to the magnitude of the effect.
97. Japan described the uses of the several mitigation measures in each country and suggested that this is discussed further. In order to avoid the confusion, firstly, it is preference for stock assessment work to be conducted first in order to determine the need for mitigation measures.
98. Australia reminded Members that significant levels of work has already been conducted in relation to stock status and it is disappointing that some stock assessment exercises in the CCSBT have not been successful to date. In particular, Australia pointed to the work undertaken by WCPFC on risk

assessment and measures adopted across RFMOs as evidence of the relative importance of adopting mitigation measures to reduce shark bycatch.

99. Australia also suggested looking at further work on indicator analysis, similar to that presented by New Zealand, as a potential way forward.
100. Japan did not believe that there were concerns about sharks in SBT fisheries based on the work of other RFMOs and the fact that SBT fishers have applied the measures adopted by these RFMOs within their respective zones. Accordingly, Japan asked whether Members wished to prioritise a particular species for assessment stating that it would be willing to contribute to such activities.
101. The Chair reminded the group that:
  - Sharks are now well recognised as being vulnerable to fishing activity;
  - The studies discussed should provide the basis for future prioritisation of work within the CCSBT; and
  - Members should consider nominating a lead to do this work and the lack of priority species given at this meeting should not be interpreted as signifying that there is no problem.
102. WCPFC is updating indicators for all 14 key shark species.
103. IOTC will be doing a blue shark stock assessment and indicators for oceanic whitetip shark and silky shark.
104. Japan questioned whether it was appropriate for the ERSWG to nominate species of concern or whether that decision should be made by the Extended Commission.
105. Australia stated that, according to the terms of reference, the role of this group is to provide advice to the Commission on vulnerable species and therefore this was already well within its mandate. The Chair confirmed this opinion.
106. Australia reiterated the importance of reporting shark species in order to shape advice to the Extended Commission noting that grouping species could mask issues and suggested that CITES<sup>5</sup> listed species could be used initially. This would improve regional data on these species. Japan suggested the stock assessment of porbeagle should be done first. And Japan commented that the CITES species of shark are generally distributed in coastal regions or low latitudes. The Chair suggested that this may not be too onerous if it truly is the case that catches of these species is minimal.
107. The group was unable to reach consensus on this proposal and the existing list of sharks that are to be reported at species level will remain unchanged. Some Members noted they will continue to provide species level information.

#### *4.2.6 Recommend mitigation measures applicable to CCSBT Vessels*

108. No papers presented under this agenda item.
109. TRAFFIC put forward a request that Members include details of their non-detriment findings for porbeagle as part of their country report.

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<sup>5</sup> Convention on International Trade in Endangered Species.

110. Australia stated that it would be willing to accommodate this change.
111. New Zealand questioned whether this was the best means of providing this information given that the findings are unlikely to change significantly from year to year and their inclusion would increase the volume of material in the country reports substantially. The information could be made readily available to requesters however.
112. Questions were raised as to whether this information was available from other sources on the internet and the group concluded that it was not.

### **4.3 Other ERS**

113. Australia briefly reiterated earlier comments relating to national reports in particular the Indonesian report which provides information on sea turtles which may be relevant to other fleets operating in the area.
114. The Secretariat asked whether IOTC had further information to provide in relation to its report and the capacity building workshops it was conducting in conjunction with IOSEA-Turtles. IOTC responded that funds are available to conduct these types of activities and that a workshop was recently run in Sri Lanka while another was planned for Oman. At this point it may be premature to involve CCSBT while IOTC develops its own capacity.

#### *4.3.1 Information on stock status*

115. No papers were submitted under this agenda item.

#### *4.3.2 Information from other fisheries of relevance*

116. No papers were submitted under this agenda item.

#### *4.3.3 Ecological risk assessment*

117. No papers were submitted under this agenda item.

#### *4.3.4 Estimates of ERS mortality and associated uncertainty*

118. This agenda item was largely covered as part of the Secretariat's summary from the data exchange.

#### *4.3.5 Assessment of mitigation measures*

119. No papers were submitted under this agenda item.

#### *4.3.6 Recommend mitigation measures applicable to CCSBT Vessels*

120. No papers were submitted under this agenda item.

#### ***4.4 Predator and prey species that may affect the condition of the SBT stock***

121. New Zealand presented an evaluation of the diets of highly migratory species in New Zealand waters based on data available from 97,101 stomachs of highly migratory species examined by observers on surface longline trips from 1994 to 2012. The research was conducted in support of the New Zealand National Fisheries Plan for Highly Migratory Species 2010 which identifies the importance of using an ecosystem approach to fisheries management.
122. The prey samples were from 65 taxonomic groups (i.e., species, genus, or family). However, 52% of examined stomachs were empty, and 13% contained only bait or parasites, leaving 33,978 stomachs (35%) containing non-bait food items. Most of the prey items were identified only into the broad categories 'fish', 'crustacean', 'squid', 'salp', and 'other', but some items were identified more precisely. Comprehensive descriptions of diet were produced for the 12 species sampled most frequently (mako shark, porbeagle shark, blue shark, long-snouted lancetfish, moonfish, Ray's bream, butterfly tuna, albacore, yellowfin tuna, southern bluefin tuna, bigeye tuna, swordfish, and short-snouted lancetfish).
123. Spatial distributions are presented for the samples of each of these predators relative to the area fished by the surface longline fishery in New Zealand waters, as are comparisons of the distributions of predators with and without items in their stomachs. Diet compositions (expressed as mean percentage volume of various prey categories) were determined for each predator species overall and by various categories (i.e., by predator length class, sample area, month, and year). Identified fish prey were combined into a series of categories, generally small mesopelagic species, large mesopelagic species, and other fish, but sometimes into more concise categories like 'tunas' or 'dealfish' when these sub-groups comprised more than about 2% of the recorded items. Similarly, sub-groups of the 'squid' (e.g., nautilus) and 'other' (e.g., anthropogenic rubbish, plant material, bird remains) categories were introduced for some predator species.
124. Ontogenetic changes in diet were apparent for most of the 13 predator species examined in detail, and some distinct within-species dietary differences were also apparent between the northern (centred on the Bay of Plenty) and southern (centred on the west coast South Island) areas. Temporal differences in diet were less obvious. The diets determined from the current study were compared with literature reports for the same species elsewhere. A discussion is presented on how the differences in diet between the main predator species might reduce any conflicts in resource use between them.
125. Although large volumes of data were available, its utility, in terms of precision of prey species identification, was not adequate to allow useful multivariate analyses. However, information derived from the current analysis is descriptive, informative, and useful. Changes to the at-sea observer stomach samples logs were recommended as a result of the research, and those changes are currently being trialled by observers with a view to future analyses using new data likely to allow more statistically rigorous results.
126. New Zealand intends reviewing the data collected from the first full year of collection and then a substantive review in 4-5 years. The results of this project and recent related research tentatively support developing a focussed ecosystem

model centred on highly migratory species, their key prey species and the ecosystem resources needed to support their prey.

127. Members commented that available information from other research programs would be useful for furthering the analyses reported in this study.

## **Agenda Item 5. ERS Data Requirements**

### ***5.1 ERSWG Data Exchange***

128. The meeting considered proposed changes to Table 1 of the ERSWG Annual Reporting Template and to Table 1 of Attachment A of the ERSWG Data Exchange that added five columns for the proportion of observed effort with different mitigation measures. Some participants considered that this information was of limited value and that the different types of mitigation measures should be provided as rows so that consideration could be made of the impact of mitigation type on mortalities. However, there was not consensus to provide that level of detail as part of an annual report or data exchange.
129. Instead, the meeting agreed to the original proposed changes with the five additional columns. These and are included in the revised ERSWG Annual Reporting Template and the revised ERSWG Data Exchange at **Attachments 6** and **7** respectively.
130. The Chair noted that the meeting had agreed the Secretariat would provide catch rates in future summaries of ERS data that it provides to ERSWG meetings. There were no requests for the Secretariat to include other additional information in future ERS data summaries.

### ***5.2 Observer data***

#### ***5.2.1 Consideration of SMMTG recommendations relating to observer programs***

131. The SMMTG recommendations relating to observer programs were discussed and reported at agenda item 4.1.5.

#### ***5.2.2 Draft Revision of the CCSBT Scientific Observer Program Standards***

132. The Secretariat introduced paper CCSBT-ERS/1503/07, noting the current version of the draft included proposed changes by the ERSWG and the Compliance Committee. Members agreed to Attachment 1, Section A mitigation measures being moved to Section C, to ensure these were recorded on a set by set basis. Members agreed that the standards should also include, where possible, to collect counts of seabird abundance around a vessel when setting.
133. Members agreed to submit the revised standards, with included revisions, as per **Attachment 8**, for consideration and adoption by the Extended Commission.

### ***5.3 Electronic monitoring***

134. Document CCSBT-ERS/1503/Info06 provided an update of the implementation and ongoing management of e-monitoring on vessels within Australia's Eastern Tuna and Billfish Fishery. In this case, electronic monitoring includes video, sensors and programmable loggers. One of the intended outcomes of the electronic monitoring is improved log book reporting, including of ERS. Australia also noted it is implementing electronic reporting through logbooks and observers.
135. ACAP provided a verbal update on recent e-monitoring discussions in WCPFC. A December 2013 meeting reviewed the development of e-monitoring and e-reporting within the WCPFC area (report available at [www.wcpfc.int](http://www.wcpfc.int)). In addition to the program being undertaken by Australia, described above, several WCPFC parties are undertaking e-monitoring and e-reporting trials. WCPFC is undertaking an evaluation to determine the net benefits and costs of e-monitoring.
136. ACAP noted that something that could be further explored is the extent to which electronic monitoring could be used for research, for example to identify seabird aggregations, which might be a cost effective process to identify the spatial and temporal distributions of seabird aggregations in the fishery.
137. Taiwan reported that it is also considering e-monitoring, especially for smaller vessels. Test have been conducted on small coastal vessels, results are still under analysis, but there has been positive feedback from industry. Taiwan hopes to share information on this at ERSWG12.

### **Agenda Item 6. Education and public relations activities**

138. There were no new education and public relations activities to report under this agenda item.

### **Agenda Item 7. Performance Review of the CCSBT**

139. The Secretariat introduced paper CCSBT-ESC/1503/08 which listed the recommendations from the CCSBT's 2014 Performance Review that are relevant to the ERSWG. The Secretariat advised that the Extended Commission will be revising its Five Year Strategic Plan and will be incorporating relevant recommendations from the Performance Review into the revised plan. This will be one of the principal tasks of the Strategy and Fisheries Management Working Group meeting that is being held from 28-30 July 2015.
140. The ERSWG considered the ERS related recommendations from the Performance Review and the ERSWG's advice in relation to these recommendations is provided at **Attachment 9**. The majority of recommendations were supported by the ERSWG, but it was noted that there were constraints on the level of resources for implementing all the recommendations.

## **Agenda Item 8. Future work program**

### ***8.1 Review of progress with the work program from ERSWG 10***

141. The Secretariat provided a summary of progress against the workplan produced by ERSWG 10. It was agreed that for future ERSWG meetings, the workplan would be sent to participants a few months before the meeting for participants to complete their sections of the workplan.
142. It was agreed that the future ERSWG work program would be related to the CCSBT's strategic plan, as it has been in previous years, and that it would contain a description of the required action, due date and responsibility for completing the action.

### ***8.2 Future work program***

143. The meeting developed a workplan to guide its work towards ERSWG 12 and ERSWG 13. The workplan is provide at **Attachment 10**.

## **Agenda Item 9. Other business**

144. ACAP presented the paper CCSBT-ERS/1503/15 which proposed a memorandum of understanding (MoU) between the CCSBT and ACAP Secretariat. The MoU was based on the draft which was considered at CCSBT17 and has incorporated Members' comments on the original draft. ACAP is still keen to progress the MoU, noting that it would facilitate the sharing of data between the organisations. ACAP also has confidentiality issues with the fisheries data it holds and would like to cooperate with the CCSBT in the provision of that data and the exchange of information. The revised MoU was submitted to ERSWG11 for its consideration and hopefully recommendation to the EC.
145. The meeting commented on the considerable benefits already obtained through the close collaboration with ACAP and the high importance of ACAP's contributions to the ERSWG. The meeting therefore endorsed and strongly supported the proposed MoU.
146. The WCPFC and Birdlife International presented an overview of the ABNJ Tuna Project, particularly the shark and seabird components of that project which are relevant to the ERSWG.

## **Agenda Item 10. Referral of ERS matters for consideration by CCSBT subsidiary bodies**

147. The ERSWG requests the Compliance Committee to collate information from Members on the types of information collected on bycatch mitigation measures under compliance programs for SBT vessels (e.g. port inspections and other monitoring and surveillance programs). This information would be provided to the ERSWG for scientific purposes only associated with assessing total seabird



mortality and may lead to feedback to the Compliance Committee on the collection of better data for scientific purposes.

148. The ERSWG prepared a table of recommendations in response to the ERS relevant recommendations of the 2014 CCSBT Performance Review, for consideration by the Strategy and Fisheries Management Working Group.
149. The ERSWG noted that the report of ERSWG11 and the revised draft of the Scientific Observer Program Standards will be provided to the Extended Scientific Committee (ESC) for its consideration.

### **Agenda Item 11. Recommendations and advice to the Extended Commission**

150. The ERSWG has not changed its advice with regards to seabirds and reiterates its advice in paragraphs 125, 129 and 131 of the ERSWG 9 report.
151. The ERSWG has finalised its revision of the Scientific Observer Program Standards and recommends that the revised standards be adopted by the Extended Commission.
152. The timeframe for CCSBT meeting reports becoming public under current CCSBT Rules and Procedures can prevent their timely use by working groups of other RFMOs and the ERSWG recommends that earlier release of ERSWG meeting reports be supported, particularly as ERSWG meetings are often out of phase with meetings of the Extended Commission.
153. Approval be granted to provide the SMMTG report to ICCAT, the other tuna RFMOs and ACAP before their next bycatch working group meetings.
154. The ERSWG commented on the considerable benefits obtained through the close collaboration with ACAP and the high importance of ACAP's contributions to the ERSWG. The meeting therefore endorsed and strongly supported the proposed MoU between ACAP and the CCSBT.

### **Agenda Item 12. Conclusion**

#### ***11.1 Adoption of meeting report***

155. The report was adopted.

#### ***11.2 Recommendation of timing of next meeting***

156. Some Members recommended holding the next meeting in 18 months, aligned with the 2016 ESC meeting, and with ERSWG meetings to be held on an annual basis after that. It was noted that considerable cost savings can be achieved if ERSWG and ESC meetings are held back to back. Other Members preferred to hold the next ERSWG at a later time, to be decided around mid-2016, due to the heavy workload of numerous ERS meetings with other tuna RFMOs.
157. It was agreed that it would be useful for the next meeting to have 1 day dedicated to a focus topic to allow detailed technical discussions on that topic.

158. The meeting was advised that the annual ERSWG Data exchange and the Secretariat summary of the exchange is an annual process regardless of the presence of ERSWG meetings, but that submission of annual reports to the ERSWG is currently linked to meetings and that these are not provided in the absence of an ERSWG meeting.

***11.3. Close of meeting***

The meeting closed at 3:46 pm, 6 March 2015.

## **List of Attachments**

### **Attachment**

1. List of Participants
2. Agenda
3. List of Documents
4. Modified SMMTG Recommendations Agreed by ERSWG 11
5. Joint-tuna RFMO review of seabird CMMs: A proposal for an ABNJ Tuna Project funded and led process
6. Revised Template for the Annual Report to the Ecologically Related Species Working Group
7. ERSWG Data Exchange
8. Draft Revised CCSBT Scientific Observer Program Standards
9. ERSWG Consideration of the Recommendations from the 2014 Performance Review of the CCSBT
10. Workplan from ERSWG11

**List of Participants**  
**The Eleventh Meeting of the Ecologically Related Species Working Group**

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**Agenda**  
**Eleventh meeting of the Ecologically Related Species Working Group**  
**3 - 6 March 2015**  
**Tokyo, Japan**

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 Cooperating Non-Members
3. Reports of meetings and/or outcomes of other organisations relevant to the ERS Working Group
4. Information and advice on ERS
  - 4.1 Seabirds
    - 4.1.1 Information on stock status
    - 4.1.2 Information from other fisheries of relevance
    - 4.1.3 Ecological risk assessment
    - 4.1.4 Estimates of ERS mortality and associated uncertainty
    - 4.1.5 Assessment of mitigation measures
    - 4.1.6 Recommend mitigation measures applicable to CCSBT Vessels
  - 4.2 Sharks
    - 4.2.1 Information on stock status
    - 4.2.2 Information from other fisheries of relevance
    - 4.2.3 Ecological risk assessment
    - 4.2.4 Estimates of ERS mortality and associated uncertainty
    - 4.2.5 Assessment of mitigation measures
    - 4.2.6 Recommend mitigation measures applicable to CCSBT Vessels
  - 4.3 Other ERS
    - 4.3.1 Information on stock status
    - 4.3.2 Information from other fisheries of relevance
    - 4.3.3 Ecological risk assessment
    - 4.3.4 Estimates of ERS mortality and associated uncertainty
    - 4.3.5 Assessment of mitigation measures
    - 4.3.6. Recommend mitigation measures applicable to CCSBT Vessels
  - 4.4 Predator and prey species that may affect the condition of the SBT stock

5. ERS Data Requirements
  - 5.1 ERSWG Data Exchange
  - 5.2 Observer data
    - 5.2.1 Consideration of SMMTG recommendations relating to observer programs
    - 5.2.2 Draft Revision of the CCSBT Scientific Observer Program Standards
  - 5.3 Electronic monitoring
6. Education and public relations activities
7. Performance Review of the CCSBT
8. Future work program
  - 8.1 Review of progress with the work program from ERSWG 10
  - 8.2 Future work program
9. Other business
10. Referral of ERS matters for consideration by CCSBT subsidiary bodies
11. Recommendations and advice to the Extended Commission
12. Conclusion
  - 12.1. Adoption of meeting report
  - 12.2. Recommendation of timing of next meeting
  - 12.3. Close of meeting

**List of Documents**

**Eleventh Meeting of the Ecologically Related Species Working Group**

**(CCSBT-ERS/1503/)**

1. Provisional Agenda
2. List of Participants
3. List of Documents
4. (Secretariat) Summary of the Level and Distribution of SBT Effort (ERSWG Agenda Item 4.1.3, 4.2.3, 4.3.3)
5. (Secretariat) Relevant Tuna RFMO Measures Concerning Incidental Catches of Ecologically Related Species (ERSWG Agenda Item 4.1.5, 4.2.5, 4.3.5)
6. (Secretariat) Summaries from the 2014 ERSWG Data Exchange (ERSWG Agenda Item 4.1.4, 4.2.4, 4.3.4, 5.1)
7. (Secretariat) Draft Revision of the CCSBT's Scientific Observer Program Standards (ERSWG Agenda Item 5.2.2)
8. (Secretariat) Performance Review of the CCSBT (ERSWG Agenda Item 7)
9. (New Zealand) Update on Porbeagle Shark Stock Assessment (ERSWG Agenda Item 4.2.4)
10. (New Zealand) Update on Seabird Ecological Risk Assessment (ERSWG Agenda Item 4.1.3)
11. (New Zealand) Evaluation of the diets of highly migratory species in New Zealand waters (ERSWG Agenda Item 4.4)
12. (ACAP) An update on the status and trends of albatrosses and petrels listed under Annex 1 of ACAP (ERSWG Agenda Item 4.1.1)
13. (ACAP) Review Of Seabird Bycatch Mitigation Measures For Pelagic Longline Fisheries (ERSWG Agenda Item 4.1.5)
14. (ACAP) Outcomes from the 8th Meeting of ACAP's Advisory Committee of Relevance to the ERS Working Group (ERSWG Agenda Item 3)
15. (ACAP) Draft Memorandum of Understanding between the Commission for the Conservation of Southern Bluefin Tuna and the Secretariat for the Agreement on the Conservation of Albatrosses and Petrels (ERSWG Agenda Item 9)
16. (Japan) Review of seabird bycatch from 1996-2013 in Japanese scientific observer data (Yukiko Inoue, Hiroshi Minami) (ERSWG Agenda Item 4.1.4)
17. (Japan) Estimation of incidental catch of seabirds in the Japanese southern bluefin tuna longline fishery in 2013 (Hiroshi Minami, Yukiko Inoue) (ERSWG Agenda Item 4.1.4)

18. (Japan) Review of Japanese catch, effort and size data of porbeagle (*Lamna nasus*) in the southern hemisphere (Seiji Ohshimo, Ko Shiozaki, Yasuko Semba, Kotaro Yokawa) (ERSWG Agenda Item 4.2.1)
19. (IOTC) Activities of the Indian Ocean Tuna Commission (IOTC) Relevant to the Ecologically Related Species Working Group (ERSWG Agenda Item 3, 4.1, 4.2, 4.3, 5.2)
20. (SMMTG) Scoping Paper: Approaches for Measuring and Monitoring the Effectiveness of Seabird Conservation Measures in SBT Longline Fisheries (ERSWG Agenda Item 4.1.5, 4.1.6, 5.2.1, 10)
21. (New Zealand) Indicator based analysis of the status of New Zealand blue, mako and porbeagle sharks (ERSWG Agenda Item 4.2.1)

**(CCSBT-ERS/1503/BGD)**

1. (Japan) Report of Japanese scientific observer activities for southern bluefin tuna fishery in 2013 (Osamu Sakai, Tomoyuki Itoh, Hiroshi Minami, Osamu Abe) (*Previously CCSBT-ESC/1409/29*) (ERSWG Agenda Item 2.1)

**(CCSBT-ERS/1503/Annual Report-)**

Australia	Ecologically Related Species in the Australian Southern Bluefin Tuna Fishery 2012–13 and 2013–14
Fishing Entity of Taiwan	National Report of Taiwan: Ecologically Related Species in the Taiwanese Southern Bluefin Tuna Fishery 2012-2013
Indonesia	2015 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, 2013
New Zealand	Ecologically Related Species in the New Zealand Southern Bluefin Tuna Longline Fishery
Republic of Korea	2015 Annual Report to the Ecologically Related Species Working Group
European Union	Annual Report to the 11 <sup>th</sup> meeting of the Ecologically Related Species Working Group
South Africa	South Africa’s Annual Report to the Ecologically Related Species Working Group of the Commission for the Conservation of Southern Bluefin Tuna

**(CCSBT- ERS/1503/Info)**

1. (IOTC) Report of the 10<sup>th</sup> Session of the IOTC Working Party on Ecosystem and Bycatch (ERSWG Agenda Item 3)
2. (IOSEA-Turtles) Report of the Seventh Meeting of IOSEA Signatory States (ERSWG Agenda Item 3, 4.3)
3. (Australia) Developments in the use of sliding weights in an Australian pelagic longline fishery: voluntary uptake, compliance and methods to minimise lead loss to the environment (ERSWG Agenda Item 4.1)
4. (Australia) The development and operational testing of an underwater bait setting system to prevent the mortality of albatrosses and petrels in pelagic longline fisheries (ERSWG Agenda Item 4.1)
5. (Australia) A review of shark bycatch mitigation in tuna longline fisheries (ERSWG Agenda Item 4.2)
6. (Australia) Enhanced monitoring in the Eastern Tuna and Billfish Fishery (ERSWG Agenda Item 5.3)
7. (New Zealand) Novel approaches to line-weighting in New Zealand's inshore surface-longline fishery (ERSWG Agenda Item 4.1.6)
8. (Korea) Outcomes of at-sea trials into different line-weighting options for Korean tuna longline vessels (ERSWG Agenda Item 4.1.6)
9. (HSI) HSI report to the eleventh meeting of the Ecologically Related Species Working Group (ERSWG Agenda Item 3)
10. (Japan) Report of the ICCAT Sub-Committee on Ecosystems (Kotaro Yokawa) (ERSWG Agenda Item 3)
11. (New Zealand) National Plan of Action for the Conservation and Management of Sharks 2013 (ERSWG Agenda Item 4.2)
12. (South Africa) National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks) (ERSWG Agenda Item 4.2)

**(CCSBT-ERS/1503/Rep)**

1. Report of the Effectiveness of Seabird Mitigation Measures Technical Group (November 2014) (ERSWG Agenda Item 4.1.5, 4.1.6, 5.2.1, 10)
2. Report of the Twenty First Annual Meeting of the Commission (October 2014)
3. Report of the Ninth Meeting of the Compliance Committee (October 2014)
4. Report of the Nineteenth Meeting of the Scientific Committee (September 2014)
5. Report of the Third Meeting of the Compliance Committee Working Group (April 2014)
6. Report of the Twentieth Annual Meeting of the Commission (October 2013)
7. Report of the Eighth Meeting of the Compliance Committee (October 2013)

8. Report of the Eighteenth Meeting of the Scientific Committee (September 2013)
9. Report of the Tenth Meeting of the Ecologically Related Species Working Group (August 2013)
10. Report of the Ninth Meeting of the Ecologically Related Species Working Group (March 2012)

### Modified SMMTG Recommendations Agreed by ERSWG 11

The modified SMMTG recommendations supported by the ERSWG are shown in bold below.

#### *Provide documents to January 2015 Kobe TWG-BYC Meeting*

**SMMTG requested that the CCSBT Secretariat submit current CCSBT documents on national reporting requirements and observer information standards to the January 2015 Kobe TWG-Bycatch meeting.** (The ERSWG noted that this was done.)

#### *Reviewing Content and Coverage of t-RFMO Seabird CMMs*

**It was suggested that ERSWG considers developing a work plan which has an increased use of collaborative analyses. These might include joint stock assessment style workshops in which participants bring data and undertake collaborative analyses, bilateral collaboration intersessionally or designating key scientists to undertake analyses of joint datasets. A draft workplan to begin this work with respect to cooperation across tRFMOs will be provided in an Appendix of the finalised scoping paper that will be submitted to ERSWG 11.** (The final scoping paper included in its Appendix 2, ideas for collaboration across tuna RFMOs on seabird bycatch analyses. These were further developed by ERSWG 11 as two linked preliminary project proposals which were to be finalised by Birdlife International prior to submission for funding as an additional components under Birdlife International's existing ABNJ Tuna Project. One proposal was aimed at capacity development for the analysis of seabird data. The other was aimed at using the skills developed to progress assessments across tuna RFMOs. The ERSWG 11 participants endorsed these proposals as a potentially very effective way to evaluate effectiveness of seabird conservation measures, facilitate the assessment of cumulative impacts, and improve skills that could be applied to a range of other bycatch species.)

#### *Methods for Reviewing Data on t-RFMO Longline Fleets*

**The workshop agreed that measures of both % longline observer coverage and spatial-temporal representativeness were important metrics of longline observer program data. Spatial and temporal representativeness are needed for developing reliable estimates of seabird capture rates and in particular for understanding and reducing uncertainty in estimates.** (ERSWG considered that metrics should be developed on a fleet by fleet basis as it noted that there was substantial variation in reported capture rates among fleets.)

**The group recommended that, for the purpose of evaluation, the % coverage of observations be calculated as number of hooks observed per stratum divided by total fishing effort per stratum, and that representativeness should be evaluated using the calculated proportion of strata which have met the relevant target level of observer coverage. (The ERSWG agreed that this metric would be a useful addition to be calculated and reported after the Data Exchange had been completed).**

**When discussing options for reviewing quality of observer data, it was agreed that the ERSWG currently undertakes such a review. An additional metric of data quality was therefore not considered necessary, but the group noted several activities could help improve the quality of observer data, including:**

- **The ACAP-Japan seabird species identification guide, which is planned to be translated into French, Spanish, Korean, Taiwanese, Indonesian and other key languages;**
- **Collecting whole specimens when practical and when not practical collecting biological samples and/or bycatch photos for confirmation of species ID;**
- **Debriefing observers after the trip to elicit more information about the occurrence of high bycatch events;**
- **More detailed guidance on priorities for seabird related tasks, including how to allocate observer time appropriately, recognising multiple demands made on observer time; and**
- **Development of mechanisms to facilitate the collection and analysis of DNA from bycaught birds including reference databases. (The ERSWG noted these points and incorporated them, where appropriate, into comments on the Observer Standard and its Workplan.)**

**The group recognised that it would be useful to have a central system by which seabird bycatch photos collected by observers could be validated. Alternatives could include accessing online volunteer networks (such as [www.ispotnature.org](http://www.ispotnature.org)) or seabird specialists.**

*Methods to monitor implementation of mitigation measure*

**CCSBT should share, and encourage other t-RFMOs to share, documents, formats and procedures for observer data collection through a dedicated web portal or through the WCPFC-hosted BMIS<sup>1</sup>. (WCPFC/ABNJ Tuna Project confirmed that BMIS is being developed in a way that will facilitate this kind of sharing).**

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<sup>1</sup> Bycatch Mitigation Information System.



**The ERSWG requests the Compliance Committee to collate information from Members on the types of information collected on bycatch mitigation measures under compliance programs for SBT vessels (e.g. port inspections and other monitoring and surveillance programs). This information should be provided to the ERSWG for scientific purposes associated with assessing total seabird mortality and for feedback to the Compliance Committee on the collection of better data for scientific purposes. The group suggested that CCSBT Members be encouraged to assist in the development of electronic monitoring technologies through participating in trials and reporting back on their experiences.**

*Methods to measure and monitor the level and impact of seabird bycatch*

**There should be a tiered approach to measuring and monitoring seabird bycatch and the efficacy of mitigation measures, as per the following:**

- **The first tier would entail monitoring based on the agreed annual reporting template. This would include estimates of seabird bycatch per unit fishing effort and total number of seabirds caught.**
- **The annual monitoring should be complemented by periodic (once every three to five years) assessments, using fine-scale information, preferably at a set level and across multiple t-RFMOs if possible, taking into account data confidentiality. This could take the form of a data assessment workshop, at which countries and relevant experts collaboratively undertake the data analyses, or alternatively could involve Members conducting their own analyses according to agreed protocols and contributing the results of these analyses to the assessment process.**

**As far as possible assessment methods and efforts should be harmonised across tuna RFMOs so that the cumulative impacts of fishing activities on seabirds can be determined.** (ERSWG11 noted that although cross t-RFMO assessments would be valuable, and that it endorsed the newly developed proposals for such assessments to be submitted by Birdlife International noted above, the ERSWG has a responsibility to undertake assessments and provide advice to the EC.)

Development and Testing of Assessment Methods

**The planned revisions to the CCSBT seabird risk assessment will identify absolute levels of spatial and temporal risk of seabird bycatch within the CCSBT area. There is currently no definition of what are “high risk” areas. ERSWG11 agreed to address the definition of ‘high risk areas’ through discussion of papers presented at ERSWG12 and at any joint meetings of the tuna RFMOs. This was considered to be a useful complement to the results of forthcoming New Zealand seabird risk assessment and may facilitate the analysis of seabird bycatch data.**

**CCSBT should prepare a brief description of the availability and resolution of fishing effort data, including an explicit statement of the assumptions used in raising that data. Options for improving effort data should also be outlined. CCSBT should request that the other t-RFMO Secretariats provide similar summaries. Under the ABNJ Tuna Project, the WCPFC-based BMIS can provide a portal for storing this information and maintaining it in an updated form. The group highlighted the need to understand the degree of overlap in reporting seabird bycatch and associated data to multiple tuna RFMOs. (The ABNJ Tuna Project/WCPFC confirmed that this request can be accommodated by BMIS).**

**The group agreed that more work is required on potential methods for calculating bycatch rates and extrapolating to total number of birds killed. New Zealand will progress this work in 2015 and an ACAP subgroup will discuss the topic in 2016. CCSBT Members were encouraged to contribute expertise to these ongoing efforts. (New Zealand indicated that it had initiated this work and had begun drafting a paper describing potential methods but sought input from other participants in this process. This activity has been added to the ERSWG's workplan.).**

#### Ways of extending monitoring across other tuna RFMOs

**The ERSWG Work Plan shall include the development of estimates of background bycatch rates (pre bycatch mitigation) using retrospective analyses, in order to compare these to current seabird bycatch rates and assess effectiveness of tuna RFMO seabird CMMs. It was noted that these may only be possible for certain regions, and that phased implementation meant there would seldom be a knife-edge transition pre and post implementation. Such an analysis would need to:**

- **Identify suitable datasets which have a long enough time series and sufficient levels of observer coverage;**
- **Identify what the seabird CMMs required and when they were implemented; and**
- **Take care not to confound comparisons with changes in fishing gear configurations, areas fished or seasons fished. (Members expressed varying levels of optimism and assigned different levels of priority to this task. While the outcome will depend on the data available it was noted that high variability between fleets might hamper the combination of fleets for estimation of an area-wide baseline. In such cases, the pre- and post-comparisons would be within specific fleets only).**

**It was agreed that it would be useful to submit to the June 2015 ICCAT Subcommittee on Ecosystems meeting a proposal for tuna RFMO collaboration on seabird bycatch analyses.**

Annual Report Data Exchange Template

**ERSWG recommended that the proportion of effort associated with the use of various mitigation measures be added to the Data Exchange Format of the Template for the Annual Report to the Ecologically Related Species Working Group (ERSWG). This would assist in interpreting any trends in the unstandardised catch rate data it contains and in measuring the effectiveness of seabird CMMs. (An amended template was adopted)**

**The group recommends that the ERSWG review the data included in the annual report template to support improved evaluation of seabird CMMs. (This was accomplished under Agenda Item 3 and the review of CCSBT-ERS/1503/06).**

A small working group was convened to discuss the SMMTG's proposal for t-RFMO collaboration on seabird bycatch analyses, including ideas for national capacity building activities.

**Joint-tuna RFMO review of seabird CMMs: A proposal for an ABNJ Tuna Project funded and led process**

Due to the migratory nature of albatrosses and petrels, which disperse across the areas of competence of multiple tuna RFMOs, in light of the planned ICCAT and IOTC seabird CMM reviews (due to start 2015), and in response to the outcomes of CCSBT's Seabird Mitigation Measures Technical Group, a joint tuna RFMO review of the current tuna RFMO seabird CMMs is proposed to examine their effectiveness, including the following:

- An estimate of total take as bycatch of seabirds, by species as far as possible, across the tuna RFMOs; and
- An examination of the levels of seabird interaction pre and post the introduction of seabird bycatch conservation and management measures.

This program of work would include the following steps:

- i. Review and document available observer data in advance of the workshop, including its spatial and temporal representativeness**  
The purpose of this review is to ensure the workshop has available relevant information, to assess the quality of the available data and to maximise the value derived from workshop time.
- ii. Review and document available data on the use of mitigation measures in advance of the workshop, including spatial and temporal components**  
The purpose of this review is to ensure the workshop has available relevant information, to assess the quality of the available data and to maximise the value derived from workshop time.
- iii. Convene a joint tuna RFMO workshop to review the effectiveness of seabird CMMs**  
The workshop would seek to achieve:
  - An estimate of total take as bycatch of seabirds, by species, across the tuna RFMOs;
  - An examination of the levels of seabird interaction pre and post the introduction of seabird bycatch conservation and management measures;
  - Comprehensive, area-wide, quantitative assessments of the risks to seabirds from fisheries;

- Identification of best practices for collecting and analysing seabird bycatch data, including analytical methods for both data-poor and data-rich scenarios;
- Recommendations on how the effectiveness of tuna RFMO seabird CMMs could be improved; and
- A long-term workplan for periodic review of seabird CMM effectiveness.

Workshop participants would include independent experts as well as tuna RFMOs.

### **Proposed timeframe**

It is intended to propose a revised budget to progress this proposal. BirdLife International as the ABNJ Tuna Project Seabirds lead would seek confirmation from FAO/GEF in June 2015. The proposal and approach would be communicated to and refined with, respectively, ICCAT in June 2015, WCPFC in August 2015 and IOTC in Sept 2015. The intention would be to conduct the workshop in mid 2017.

### **Support for this approach**

The proposal arose from discussions at CCSBT's Seabird Mitigation Measures Technical Group. Subsequently CCSBT's ERSWG has considered and supports the proposal. The IOTC WPEB10 meeting provided in principle support of this process, noting that it would need to be further advised. The approach fits well with the joint tuna RFMO approach to seabird bycatch. It is intended to discuss the proposal with IATTC, ICCAT, IOTC and WCPFC to confirm their support. BirdLife International as the lead organisation for the ABNJ Tuna Project Seabirds component would undertake that communication.

Further, the cohort of analysts developed under the related **Preparation and capacity building among national scientists project** will provide a valuable resource for the joint tuna RFMO assessment of the effectiveness of seabird conservation measures in the future.

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

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. Seabird<sup>1</sup>
  - Summary of cpue and total numbers of seabird incidentally caught by area and fleet and list of numbers of each seabird species caught reported from observers<sup>2</sup>.
  - Summary of seabird captures from sources other than observers.
5. Other Non-target Fish<sup>1</sup>
  - Summary of cpue and total numbers of shark and the predominant non-target fish species by area and fleet reported from observers<sup>2</sup>.
  - Summary of non-target fish captures from sources other than observers.
6. Marine Mammal and Marine Reptile<sup>1</sup>
  - Summary of total numbers of marine mammal and marine reptile incidentally caught reported from observers<sup>2</sup>.
  - Summary of marine mammal and marine reptile captures from sources other than observers.
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

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

<sup>2</sup> 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.

*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

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.

**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	Proportion of observed effort with specific mitigation measures				
Stratum ( <i>CCSBT Statistical Areas or finer scale</i> )	Total Effort <sup>3</sup>	Total Observed Effort <sup>3</sup>	Observer Coverage <sup>4</sup>	Captures ( <i>number</i> )	Capture Rate <sup>5</sup>	Mortalities ( <i>number</i> )	Mortality Rate <sup>5</sup>	Live releases ( <i>number</i> )	Estimated total mortalities ( <i>number</i> )	TP + NS <sup>6</sup>	TP + WB <sup>6</sup>	NS + WB <sup>6</sup>	TP + WB + NS <sup>6</sup>	NIL <sup>6</sup>
<b>TOTAL</b>														

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.  
 6 TP = tori poles, NS = night setting, WB = weighted branchline, NIL = no mitigation measures used.

## **ERSWG Data Exchange**

### **Introduction**

The ERSWG Data Exchange is divided into three sections:

1. Data to be provided;
2. Frequency & timeframe for data provision; and
3. Confidentiality.

The Data Exchange described here is intended for the sharing of information for “general” ERSWG purposes. It is expected that the ERSWG will conduct assessments from time to time that will require more detailed information and CCSBT Members have expressed their willingness, in principle, to share more detailed information on a case by case basis with those who have been tasked with leading such assessments.

## **1. Data to be provided**

ERSWG 9 made three important recommendations to the Extended Commission that form the basis of this data exchange proposal. These are that:

- For the purpose of the ERS Data Exchange, the SBT fishery is defined as all fishing effort by authorised vessels<sup>1</sup> for shots/sets where SBT was either targeted or caught<sup>2</sup>. Data for the full SBT fishery as defined here is to be provided as part of this data exchange. Data should not be provided for fishing that does not match this definition.
- Data is to be provided by stratum, with the default stratum being CCSBT statistical areas unless an analysis has shown that better strata could be defined for the ERS interactions in the national fishery.
- The specific data items to be provided are as specified in Table 1 of the new ERSWG template for annual reports<sup>3</sup>, which are:
  - Country/Fishing Entity (*suggest using 2 digit country code, e.g. “JP”*)
  - Calendar year
  - Species (*or group*<sup>4</sup>)
  - Fishery (*defined by a combination of gear and fleet – see Attachment A*)
  - Stratum (*CCSBT statistical area*)
  - Total effort<sup>5</sup>
  - Total observed effort<sup>5</sup>
  - Observer coverage (*percentage*<sup>6</sup>)
  - Proportion of observed effort with specific mitigation measures
  - Observed captures (*number*)
  - Observed capture rate<sup>7</sup>
  - Observed mortalities (*number*)
  - Observed mortality rate<sup>7</sup>
  - Observed number of live releases
  - Estimated total number of mortalities in year/stratum<sup>8</sup>

For the actual exchange of data, the above data items will be provided in two separate tables as outlined in **Attachment A**. This style of data provision would

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<sup>1</sup> Authorised vessels are vessels on the CCSBT authorised list of vessels during the relevant calendar year.

<sup>2</sup> For clarification, it is intended that the only information that would be included in the exchange is information from those shots that targeted **or** caught SBT. Hence, if a bycatch vessel only caught 1 SBT for the year, it would only be data from that one SBT shot that would be included in the exchanged information.

<sup>3</sup> Attachment 4 of the ERSWG 9 report.

<sup>4</sup> Information should be provided by species (including the scientific name) wherever practical. For species where species specific reporting is not practical (e.g. due to insufficient data, or the high level of work involved), then the level of taxonomic reporting should be at least to the level specified in Table 3. The ideal way to provide species information would be to use the 3 alpha FAO Species Code. If this is not possible, provide a code for the species and provide a separate lookup table that gives the species code, scientific and common names, family name etc.

<sup>5</sup> For longline provide number of hooks, for purse seine provide number of sets.

<sup>6</sup> For longline provide as a percentage of the number of hooks, for purse seine provide as a percentage of the number of shots.

<sup>7</sup> For longline provide as captures/mortalities per thousand hooks, for purse seine provide as captures/mortalities per set.

<sup>8</sup> In cases where there is no estimate for the total number of mortalities (e.g. due to no or insufficient observer coverage in the strata), then this field should be left empty.

prevent double counting and possible confusion in relation to the effort information.

To be consistent with standard practise of the Extended Scientific Committee (ESC):

- Data will be provided for the most recently completed calendar year (e.g. the 2013 data exchange would provide data for the 2012 calendar year); and
- The data exchange will include any updates for the previous calendar year (i.e. the 2013 data exchange would also include revised data for 2011).

For the very first exchange of data:

- Data for 2010 and 2011 will be provided by 30 April 2013 for all species<sup>9</sup>; and
- Data for 2012 will be provided by 31 July 2013.

For an initial period after the first data exchange (possibly 3 years, but still to be determined), Members will work towards improving the quality of their data and they will be able to revise any submitted data with improved information during this period. After this initial period of data improvement, changes to past data should be accompanied by an explanation of the changes.

## **2. Frequency & timeframe for data provision**

Consistent with standard practise of the Extended Scientific Committee (ESC), it is proposed that:

- The ERS data exchange occurs on an annual basis, regardless of whether there is an ERSWG meeting in that year<sup>10</sup>.
- The required ERS data is submitted to the Secretariat by 31 July.

## **3. Confidentiality**

The data will be treated in accordance with the "[Rules and Procedures for the Protection, Access to, and Dissemination of Data Compiled by the CCSBT](#)" and will be rated as "medium risk". This means that the data will not be publicly available, and that they require specific authorisation to be released and may not be placed on the CCSBT Data CD or on the private area of the CCSBT web site (unless in a special part of the private area that is further restricted to specifically authorised people).

It is envisaged that the Secretariat would load exchanged ERS data to a special section of the private area of the web site titled "ERSWG Data Exchange" that only people with specific authorisation can access.

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<sup>9</sup> It may be useful to have a longer time-series of data, but there will almost certainly be problems in the first data submission so it makes sense to keep the initial time-series short while these problems are "ironed-out". Discussion on whether or not a longer time-series is necessary could take place at an ERSWG meeting after the initial data submission.

<sup>10</sup> For data required as part of the CCSBT Management Procedure, the ESC decided that these data should be provided every year despite these data only being required every third year. This was to ensure that the skills and knowledge required to provide the necessary data were retained and so that there would be very few problems in provision of that data when required. This has proved to be a successful strategy for the ESC that makes equally good sense for an ERS Data Exchange.

### Proposed Format for Providing Data for the ERSWG Data Exchange

The information should be provided in electronic form in two separate tables (e.g. 2 MS-Excel spreadsheets) as described below. The common columns in the two tables are highlighted in yellow.

Table 1: Total fishing and observed effort per country, year, fishery and strata.

Country / Fishing Entity <sup>11</sup>	Calendar Year	Fishery		CCSBT Statistical Area <sup>12</sup>	Total Effort <sup>5</sup>	Total Observed Effort <sup>5</sup>	Observer Coverage (percentage <sup>6</sup> )	Proportion of observed effort with specific mitigation measures				
		Gear Code <sup>13</sup>	Fleet Code <sup>14</sup>					TP + NS <sup>15</sup>	TP + WB <sup>15</sup>	NS + WB <sup>15</sup>	TP + WB + NS <sup>15</sup>	NIL <sup>15</sup>

Table 2: Observed and estimated captures/mortalities for each species, by country, year, fishery and strata.

Country / Fishing Entity <sup>11</sup>	Calendar Year	Fishery		CCSBT Statistical Area <sup>12</sup>	Species (or group) <sup>4</sup>	Observed Captures (number)	Observed Capture Rate <sup>7</sup>	Observed Mortalities (number)	Observed Mortality Rate <sup>7</sup>	Observed Live Releases	Estimated total number of mortalities <sup>8</sup>
		Gear Code <sup>13</sup>	Fleet Code <sup>14</sup>								

<sup>11</sup> Use the two digit country code (e.g. AU, ID, JP, KR, NZ, TW, ZA and PH)

<sup>12</sup> The codes (1-15) are defined in the CCSBT CDS Resolution.

<sup>13</sup> Use the gear codes described in the CCSBT CDS Resolution (e.g. “LL” for longline, “PS” for purse seine, “TROL” for troll, etc.)

<sup>14</sup> In most cases, this is just the two digit country code, followed by “D” for domestic for the domestic fleet (e.g. AUD, IDD, JPD, KR, NZD, TWD, ZAD and PHD). In some cases, the final letter is different, such as for the New Zealand Charter Fleet, which has the code “NZC”. Contact the Secretariat if in doubt.

<sup>15</sup> TP = tori poles, NS = night setting, WB = weighted branchline, NIL = no mitigation measures used

Table 3: Minimum taxonomic level at which information should be reported in Table 2 (providing that such taxonomic detail is available)<sup>16</sup>. Information should be provided to species level where this is practical. Reporting of any of the following species and/or groups within table 2 should include an appropriate stratification of the data.

Species/Species Group	Comments
Sharks	
Blue Shark	
Shortfin Mako Shark	
Porbeagle	
Other sharks	
Turtles	For sea turtles, the number of species is small (approximately 7), so it is feasible to report data by stratum for each species.
Species specific	<i>Data should be provided separately for each species</i>
Seabirds	For seabirds, there are a large number of species and it is often difficult to separately identify species by pictures only. Reporting of seabird data by species would contain identification errors.
Large albatrosses	<i>Including: Wandering, Tristan, New Zealand, Antipodean, Southern Royal, and Northern Royal</i>
Dark coloured albatrosses	<i>Including: Sooty and Light-mantled</i>
Other albatrosses	<i>Including: Black-browed, Campbell, Grey-headed, Atlantic yellow-nosed, Indian yellow-nosed, Buller's, Shy, Salvin's, Chatham and White-capped</i>
Giant petrels	<i>Including: White-chinned petrel, Grey petrel, Flesh-footed shearwater etc.</i>
Other seabirds	<i>Including: Skua etc.</i>

<sup>16</sup> The minimum taxonomic level will be subject to improvement (become more species specific) in future. Furthermore the ERSWG might recommend specific species to be reported based on risk assessments or based on advice it may seek from organisations with the necessary expertise.

**Attachment 8**

Commission for the Conservation of  
Southern Bluefin Tuna



みなまぐろ保存委員会

**DRAFT REVISED CCSBT Scientific Observer Program  
Standards**

TABLE OF CONTENTS

**1. BACKGROUND**

**2. OBJECTIVES**

**3. RESPONSIBILITY FOR PROGRAM OPERATION**

**4. COVERAGE**

**5. LEVELS OF SCIENTIFIC OBSERVER COVERAGE**

**6. ASSIGNMENT OF SCIENTIFIC OBSERVERS TO VESSELS**

**7. TAGGING PROGRAM**

**8. RECRUITMENT AND TRAINING**

**9. THE OBSERVED VESSEL**

**10. INFORMATION AND DATA**

**11. REPORTING**

**12. CONFIDENTIALITY OF DATA AND INFORMATION**



## **LIST OF ATTACHMENTS**

Attachment 1	Type and Format of Scientific Observer Data
Attachment 2	Reporting Requirements

## **1. BACKGROUND**

The Commission for the Conservation of Southern Bluefin Tuna (CCSBT) has adopted a Scientific Research Program (SRP) with an overall objective of improving the quality of the data and information used as input to the stock assessment for Southern Bluefin Tuna (SBT), contributing to the development of reliable indices to monitor future trends in SBT stock size and identifying directions for further scientific research.

At CCSBT7 in April 2001 the Commission adopted the report of the Fifth Meeting of Scientific Committee, which recommended a SRP incorporating a Scientific Observer Program as one of four priority elements. The Observer Program endorsed by the Commission comprised the following features:-

- an observer coverage of 10% for catch and effort as a target level
- the level of observer coverage for estimation of tag reporting rates will depend on the scale of the tagging program subsequently agreed by the Commission and the tag recapture rate.
- standards for training of observers, operation of observer programs and the data to be collected including the forms to be used will be prepared
- data collected would become part of the CCSBT database as subsequently agreed in CCSBT protocols
- member countries will be responsible for operation of observers in high seas and domestic EEZ fisheries on their flag vessels
- all fleet components should be observed and target levels of observer coverage should be the same for all fleet components
- an exchange of observers between countries on a regular basis should be encouraged to maintain consistency and increase mutual trust in the results of the observer program
- recruitment of some observers from non-member nations would be encouraged

To facilitate implementation, the 6<sup>th</sup> Scientific Committee agreed that:-

- there would be an exchange of data sheets and standards for longline fleets between member countries through the Secretariat
- Australia would develop proposed program standards and data forms for the surface fisheries, taking note of the characteristics of observer programs administered by other fisheries management organizations
- the information gathered would be exchanged through the Secretariat
- proposals on draft CCSBT observer program standards will be presented and finalized at the 7<sup>th</sup> Scientific Committee meeting in 2002

Dr. Ianelli of the Advisory Panel together with the SC chair developed an initial draft of proposed outline of a CCSBT scientific observer program at the 6<sup>th</sup> Scientific Committee to serve as a basis for further discussion (See the Attachment F of the 6<sup>th</sup> SC Report.).

CCSBT8 endorsed the 6<sup>th</sup> Scientific Committee's proposals in October 2001.

The standards set out in this document reflect these decisions of the Commission and were developed in consultation with national observer program coordinators. A target level of observer coverage to meet tag reporting rate objectives has not yet been determined. When determined, the standards will be updated.

In developing the standards, the Secretariat has prepared a generic document for both surface and longline fisheries. Where the natures of the two types of fishery are differentiated in terms of observer activity, this is identified.

The tasks and record keeping requirements have been formulated to gather only that information, which is relevant to the objectives of the SRP. Consideration was also given to the practical limitations on the ability of observers to complete tasks in the fishing environment they would be operating in.

In order to facilitate implementation of the standards, the term “member” in this document means any Member of the Extended Commission of the CCSBT.

Reference to the acronym CCSBT is inclusive of the Commission and Extended Commission.

## **2. OBJECTIVES**

The standards set out below provide the framework for the operation of the CCSBT Scientific Observer Program by members.

The objectives of the standards are:

1. To provide a framework for the alignment of members’ scientific observer programs with the objectives of the SRP.
2. To standardize scientific observer programs across fleets and fisheries among members.
3. To specify minimum standards for the development of a scientific observer program for members without a program.
4. [To provide a minimum set of standards for collection of bycatch data, consistent with international recommendations, and where appropriate to assist in harmonization of bycatch data collection across tuna Regional Fisheries Management Organisations.](#)

All members are expected to adapt their respective programs ~~taking into account~~, at a minimum, meet these standards but ~~recognizing-noting~~ that members ~~may have additional~~ are encouraged to implement further requirements ~~they wish to maintain~~ in their respective programs.

## **3. RESPONSIBILITY FOR PROGRAM OPERATION**

Responsibility for the operation of the CCSBT Scientific Observer Program on the high seas and in domestic EEZ fisheries will lie with the member whose flag is flown on the vessel.

Each member’s Scientific Observer Program will be managed taking into account these standards.

Where there is an external observer exchanged under agreements concluded between members or an observer recruited from a non-member nation, that observer shall comply with the laws and regulations of the member which exercises jurisdiction over the vessel to which the observer is assigned.

## **4. COVERAGE**

The CCSBT Scientific Observer Program will cover the fishing activity of CCSBT members and cooperating non-members wherever southern bluefin tuna are targeted or are a significant bycatch.

## **5. LEVELS OF SCIENTIFIC OBSERVER COVERAGE**

The Program will have a target observer coverage of 10% for catch and effort monitoring for each fishery.

Observer coverage should therefore be representative of different vessel-types in distinct areas and times.<sup>1</sup>

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<sup>1</sup> For the purpose of this standard, it is recognized that there are many ways in which catch and effort can be stratified including vessels, areas and times. This level of coverage is relative to actual fishing operations, which, if randomly distributed, should result in about 10% of the catch.

In order to approach 10% coverage in some strata (e.g., specific vessel-types in certain areas and times) it may be necessary to have higher than 10% coverage in other strata.<sup>2</sup>

The exact level of observer placement will require periodic assessment to determine if the target level of coverage is achieved.

Consideration should also be given to higher levels of coverage in some strata from time to time to address specific fisheries management questions (e.g. to better quantify non-fish and protected species bycatch where this is identified as a risk).

## **6. ASSIGNMENT OF SCIENTIFIC OBSERVERS TO VESSELS**

From the scientific perspective, it is important to ensure that the data collected through the scientific observer programs provide representative information and sampling for the entire fleet. Ideally, each individual operation should have an equal and independent probability of being observed. In practice, this ideal may not be possible to achieve. Nevertheless, the basic principle of representative sampling should underlie the assignment of scientific observers to vessels.

It is the responsibility of each member when implementing an observer program, to assign observers to its vessels and cruises based on a carefully considered and appropriately designed sampling scheme that has a high likelihood of ensuring reasonably representative coverage. The program should ensure that, within the main fishing areas and seasons and to the extent possible, all representative vessels, areas, and time periods have an approximately equal probability of being sampled.<sup>3</sup>

Each member should evaluate and analyse the sampling scheme used for the assignment of observers against the principles outlined above. Each member should document the scheme used for the observer assignments actually implemented and make this information and data collected available to the Commission in the manner described in Section 11 to enable review within the Commission of whether or not the standards are being met.

The placement of observers should also encompass arrangements to ensure the independence and scientific integrity of the data.

## **7. TAGGING PROGRAM**

Observer programs make a very valuable contribution to the direct recording of recaptured tags, and to the estimation of non-reporting rates. Failure to adequately quantify the uncertainty associated with estimates of tag reporting rates will substantially degrade the value of any resultant mortality estimates for use in stock assessments.

Observer plans and training programs should include specific provision for the role and responsibilities of observers for tag recapture reporting. A supplemental level of observer coverage may be required to take into account the results of the CCSBT tagging program.

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<sup>2</sup> While it might be possible to observe 10% of the catch from a single vessel (if a hypothetical fleet consisted of 10 vessels with equal catch allocations), this would not achieve the objective of sampling fishing operations with approximately equal probability, particularly if the vessels fish in different areas using different techniques. Clearly there are logistical difficulties in achieving random observations of fishing operations.

<sup>3</sup> To achieve a desired target coverage level may require a higher observer placement level. For example, it may take 150 observed vessel days out of a hypothetical 1,000 vessel-day year to achieve a target of 10% coverage for all important strata. In part, this may be due to the fact that the ability of observers to transfer among vessels on the fishing grounds is limited. The factors affecting this include the heterogeneity of the fleet and fishing behaviour.

## **8. RECRUITMENT AND TRAINING**

Each member is responsible for the recruitment and training of observers for placement on their flagged vessels. Details of the processes maintained for this responsibility are for members to manage consistent with the domestic environment in which they operate.

Training schemes should be constructed to impart the skills necessary to adequately collect the scientific data and should take account of the following principles.

### Qualifications of Observers

Scientific Observers for the program should have the following attributes:

- Technically trained or experienced personnel for the fleets concerned, with interests related to fisheries.
- Ability to work at sea in difficult conditions.
- Ability to work under stressful psychological and physical situations.
- Ability to work with a boat's crew on a cooperative and team basis over long and continuous periods at sea.
- Soundness of mind and body.

### Independence / Integrity

Observers should not have current financial or beneficial interests in the fisheries in which they will be required to operate as observers.

Observers should not have been found guilty of a serious criminal offence for five years prior to appointment as an observer.

### Scientific Observer Training

Members should establish and maintain a structured training program for the CCSBT Scientific Observer Program. Manuals should be developed for this purpose and courses operated, which would allow for observers to exchange approaches and experiences to improve the data collection process.

A Scientific Observer Training program of each Member should include, at least, the following items.

- Briefing on the CCSBT SRP, particularly the CCSBT Scientific Observer and Tagging Program elements to promote a full understanding of the rationale for the Programs.
- Fishery management and biological field collection programs including species identification, data collection and sampling procedures. [This should also include identification of bycatch species, such as seabirds, sharks, marine reptiles, other ERS and knowledge of current mitigation measures that are used in the CCSBT.](#)
- Monitoring tag recovery.
- Training on safety at sea and first aid.
- Protocols for dealing with difficult situations (personal conflicts and physical hazards).
- Preparation of cruise/trip reports
- De-briefing with observers to provide feedback on improvement.
- Any additional technical training required for special project such as tagging fish, when necessary

### Recruitment of Observers

Scientific observers could be recruited from a variety of related fishery sectors to widen the knowledge and experience base of the observer cohort.

Exchange of observers between members and recruiting some observers from non-members should be encouraged to improve consistency and transparency in the program. Responsibility for

implementing observer exchanges would reside with members and the exchanges would be organised between relevant members and non-members as appropriate

## **9. THE OBSERVED VESSEL**

Any vessel selected for an observation should be capable of meeting the minimum requirements for accommodation, sanitary facilities, meals, equipments and communication systems equivalent to those of the crew (junior officer when possible) so that the observer's duties are not compromised.

A selected vessel should be advised of its responsibility for the observer while they are on board.

## **10. INFORMATION AND DATA**

Scientific data to be collected should include the following categories of information:

- A. Details of the observed vessel, including its size, capacity and equipment.
- B. Summary of the observed trip, which will include information such as the observer name and identification number, degree of experience, dates of embarkation and disembarkation.
- C. Comprehensive catch, effort and environmental information for each set that occurred while the observer was on-board the vessel, regardless of whether the set/haul was actually observed. This includes the target species, location fished and quantity of gear used.
- ~~C~~.D. Fishing methods and gear, including mitigation measures in use while fishing. The observer should record/describe mitigation measures, including the configurations, that were in use during the observed period. This includes the details of mitigation measures and their use as described in Attachment 1. Where applicable, the absence of mitigation equipment should also be noted.
- ~~D~~.E. Observed catch information for each period of observation, including the time at start and end of observation, the number of hooks observed, the observed catch in number and weight for SBT and all other species caught to the extent possible.
- F. Biological measurements taken of individual SBT, as much as possible, including its condition, length, weight, sex and details of samples (otoliths, scales, gonads, etc.) that were taken from the SBT for later analysis.
- ~~E~~.G. Information on SBT and ERS not retained should include counts by species and their life status (using the relevant codes as detailed in Attachment 1).
- ~~F~~.H. SBT tag recovery information, including, both tag numbers (actual tags also to be provided), date, location, length, weight, sex, details of samples taken (e.g. otoliths), and whether or not the tags were spotted during a period of fishing that was being observed.

Most of the above categories of information are related to each other in a hierarchical relationship. So, the biological details of a fish (E) relates to a particular observed period (D) from a specific set (C) for a trip (B) on a particular vessel (A).

A detailed description of the proposed information to be collected for each of the above categories is provided in Attachment 1. Hierarchies for prioritising the collection of data by species caught and SBT data are at Annex 1. In severe weather conditions, data collection should only be conducted to the extent that is it safe for the observer to do so.

## **11. REPORTING**

Each member ~~should~~ shall provide a report to the Extended Scientific Committee [and the Ecologically Related Species Working Group](#) on the sampling scheme and arrangements for collecting data of its observer program as a separate section in the member's annual fishery report. Attachment 2 documents the information that should be provided.

[Each member shall include in National Reports to the Compliance Committee and Commission, a summary of the levels of compliance in relation to the implementation of mandatory mitigation measures.](#)

## **12. CONFIDENTIALITY OF DATA AND INFORMATION**

All data and information obtained through an observer program belongs to the flag country of the observed vessel. An observer should not disclose any information without the permission of the flag country.

## Type and Format of Scientific Observer Data

**A) Details of the observed vessel and gear**

The vessel details are recorded only once for an entire trip

All fishing:

- Vessel's Name
- Vessel's Call-sign
- Vessel's Flag Country
- Name of the Captain
- Name of the fishing master
- Year vessel built
- Engine brake power (kw/hp)
- Overall length (metres)
- Gross tonnage (tonnes)
- Number of people in crew (all staff, excluding observers)
- Total freezer capacity (cubic metres)
- Fuel capacity (tonnes)
- Instrumentation and electronic fishing equipment

Instrumentation	Yes/No (or code)
<del>NNSS</del>	
GPS	
<del>Omega</del>	
Radio direction finder	
Radar	
Weather Fax	
Track plotter	
NOAA receiver	
Sounder (1=colour monitor, 2=monochrome monitor, 3=printer)	
Sonar (1=scanning, 2=PPI)	
Doppler current monitor	
Sea surface temperature recorder	
Bathy-thermograph	
Bird radar	

Longliners only:

- Material of mainlines (Nylon, Cotton thread, Other)
- Material of branchlines (Nylon, Cotton thread, Type of trace, Other)
- Material of buoylines (Nylon, Cotton thread, Other)

— Details of mitigation measures used— For seabirds

- \* — Tori Pole Bird scaring line used (Y/N)
- Line weights used (Y/N)
- Night setting with minimal deck lighting (Y/N)
- Bait thrower/line shooter used (Y/N)
- Dyed Bait (Y/N)
- Details about management of offal
- Underwater setting chute (Y/N)
- Side setting (Y/N)
- Haul mitigation (Y/N)
  - Branch line/snoed haulers
  - Brickle curtain
  - Water cannon
- Other mitigation measures used



Purse seiners only:

- Capacity of power block
- Capacity of purse winch
- Lengths and depths of all nets on board including expanded figure
- Mesh sizes of nets on board
- Number of net skiffs on board

**B) Summary of the observed trip**

- Observer's name
- Observer's organisation
- Date observer embarked (translatable to 24 hour clock, UTC to the day)
- Date observer disembarked (translatable to 24 hour clock, UTC to the day)

**C) Comprehensive catch, effort and environmental information for each set**

This information is recorded for each set while the observer is on-board a vessel, regardless of whether the set/haul was actually observed.

All fishing:

- Date and time at start of Set (translatable to 24 hour clock, UTC)
- Date and time at end of Set (translatable to 24 hour clock, UTC)
- Date and time at start of Retrieval (translatable to 24 hour clock, UTC)
- Date and time at end of Retrieval (translatable to 24 hour clock, UTC)
- Location at start of Set (latitude+N/S and longitude+E/W to a minute of accuracy)
- Wind speed (with unit) and direction (N, NNE, NE, etc.) of the operation
- ~~At the period of the wind measured~~ Time of wind measurement for operation (e.g. Noon, start of set etc.)
- Sea surface temperature (degrees Celsius, to 1 decimal place) at start of Set<sup>4</sup>
- Intended target species<sup>5</sup>

Longlining:

- Location at end of Set (latitude+N/S and longitude+E/W to a minute of accuracy)
- Direction of line set (eg straight, curved)<sup>6</sup>
- ~~• Wind speed (with unit) and direction (N, NNE, NE, etc.)~~
- ~~• (Comment: It is enough to collect the temperature at the start of set) At the period of the location and wind are measured for the operation (e.g. noon, start of set etc.)~~
- Direction of line set (straight, curved)
- Actually used mainline length (km)
- Actually used branchline length (m)
- Actually used buoyline length (m)
- Intended depth of the shallowest hook (m)
- Intended depth of the deepest hook (m)
- Type of hooks
- Number of hooks
- Number of baskets
- Seabird mitigation measure used:
  - Line weights used (Y/N)
  - Mass of added line weight (where applicable)
  - Distance between weight and hook (where applicable)
  - Number of tori lines used (where applicable)
  - Estimate of the aerial coverage achieved by tori lines (m)
  - Night setting with minimal deck lighting (Y/N)

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<sup>4</sup> It is sufficient to collect the temperature at the start of a set – i.e at the time the location and wind are measured (eg. Noon, start of set, etc)

<sup>5</sup> All species should be reported with FAO species codes, or using National codes and providing a translation table to FAO species codes. Individuals should be identified as far as possible to species level

<sup>6</sup> Codes will be used to describe the type of line set, eg. S=straight, C=curved, U=u-shaped.

- [Bait thrower/line shooter used \(Y/N\)](#)
- [Dyed Bait \(Y/N\)](#)
- [Details about management of offal](#)
- [Underwater setting chute \(Y/N\)](#)
- [Side setting \(Y/N\)](#)
- [Haul mitigation \(Y/N\)](#)
  - [Branch line/snood haulers](#)
  - [Brickle curtain](#)
  - [Water cannon](#)
- [Other mitigation measures used](#)

Distance between baskets, beacons, buoys, or floats as is appropriate to the operation (m)

- Percentage of bait by bait categories that were Fish, Squid, Artificial, and Other
- Bait status (live or dead)
- Total number by species<sup>5</sup> of SBT, and other tuna and tuna-like species caught, retained or discarded.
- Total processed weight (kg) and Processed State<sup>7</sup> by species<sup>5</sup> of SBT, and all other species caught. *(i.e. all fish, birds, turtles etc.)*

Purse Seining:

- Spotter plane used (Y/N). If used:
  - Time (translatable to 24 hour clock, UTC) and location aircraft began search
  - Time (translatable to 24 hour clock, UTC) and location aircraft ended search
  - Number, location of schools spotted by aircraft
  - Estimated size of each school spotted by the aircraft
  - Total searched distance
- Bird Radar used (Y/N)
- Logbook number and type
- Start and end Time spent for searching (from xx:xx to yy:yy translatable to 24 hour clock, UTC), location and total searched distance
- School finder (plane/vessel)
- Chumming boat used (yes/no)
- Chum status (Alive/Dead)
- Amount of chum used
- Start and end time for chumming (translatable to 24 hour clock, UTC)
- Start and end time for net shooting (translatable to 24 hour clock, UTC)
- Start and end time for net hauling (translatable to 24 hour clock, UTC)
- Start and end location for net shooting
- Start and end location for net hauling
- Light attraction used (yes/no)
- Total of wattage of lights used
- Start and end time for light attraction
- School type (e.g., shoaling/surface, FAD/debris associated)
- Length (m) of net set
- Height (m) of the net
- Number of net skiffs used
- Date and time that transfer to tow cage commenced
- Identification number of the tow cage to which the SBT were transferred
- Name of Carrier Boat that received the fish
- Estimated catch per set, species composition
- Estimated weight (kg) and/or number by species of SBT and other species caught
- Estimated weight of SBT caught alive
- Estimated weight and/or number of SBT dead during operation

Cage Towing:

- Name of carrier boat

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<sup>7</sup> As per processing codes identified in the CCSBT CDS Resolution. RD=round/whole, GG=gilled and Guttled, DR=dressed etc., as per TIS codes.

- Tow cage identification number
- Cage depth (metres)
- Cage ring diameter (metres)
- Cage mesh size (in centimetres)
- Cage has second or predator net (Y/N)
- Number of divers used
- Chute fitted in cage (Y/N)
- Effective tow speed (km/hour)
- If the catch was received from fishing operations, then for each catcher boat from which SBT were transferred, record:
  - Name of catcher boat
  - Call sign of catcher boat
  - Date and time (translatable to 24 hour clock, UTC) transfer started
  - Estimated weight of SBT transferred (tonnes)/dead SBT before transfer
- If the catch was received from another tow cage, then, record:
  - Name of the carrier boat from which the SBT came
  - Identification number of the tow cage from which the SBT came
  - Date and time (translatable to 24 hour clock, UTC) transfer started.
  - Estimated weight of SBT transferred (tonnes)/dead SBT before transfer
- Date and time (translatable to 24 hour clock, UTC) and place that tow finished
- Total weight of SBT mortalities per day from commencement of towing to end of transfer to farm
- Total number of SBT mortalities per day from commencement of towing to end of transfer to farm

#### D) Observed catch information

This relates to that part of the catch that was actually observed by the observer during the hauling process. All information recorded here relates only to the period(s) that were observed. Annex 1 provides hierarchies for the collection of data. Observers should use these hierarchies to prioritise data collection as circumstances prevail on the observed vessel.

##### Longlining:

- Date and time at the start of the observation period (translatable to 24 hour clock, UTC)
- Date and time at the end of the observation period (translatable to 24 hour clock, UTC)
- Number of hooks observed
- Total number by species<sup>5</sup> of all species caught and ~~retrieved~~ retained during the observed period<sup>8</sup>
- Total processed weight (kg) by species<sup>5</sup> and Processed State<sup>7</sup> of all species caught and retained during the observed period
- Total number and weight when possible (whole weight, in kilograms) by species<sup>5</sup> of all species caught but discarded during the observed period and life status<sup>8,9</sup>.

##### Purse Seining:

###### The entire purse seining shooting and hauling operation should be observed

- Date and time at the start of the observation period (translatable to 24 hour clock, UTC)
- Date and time at the end of the observation period (translatable to 24 hour clock, UTC)
- Estimated % of school caught
- Estimated weight (tonnes for SBT, kg for all other species<sup>5</sup>) and/or number by species of SBT, and all other species caught, retained or discarded including life status<sup>8,9</sup>
- Weight of SBT mortalities from commencement of fishing to end of transfer to cage
- Number of SBT mortalities from commencement of fishing to end of transfer to cage
- Number of species identified as escaped from commencement of fishing to end of transfer to cage

<sup>8</sup> This includes target species (such as SBT) and all bycatch species such as seabirds, ~~and sharks~~, marine reptiles etc.

<sup>9</sup> Individuals that are discarded with significant injuries and are not considered likely to survive should be included in the number of dead individuals.

- Number by species identified as discarded from commencement of fishing to end of net hauling

Cage Towing:

The observer must observe or conduct each mortality count during the period of the tow.

- Date and time at the start of the observation period (translatable to 24 hour clock, UTC)
- Date and time at the end of the observation period (translatable to 24 hour clock, UTC)
- Total weight of SBT mortalities per day from commencement of towing to end of transfer to farm
- Total number of SBT mortalities per day from commencement of towing to end of transfer to farm

**E) Biological measurements of individual fish. Biological measurements are only required for SBT, but where possible, effort should be made to measure other species.**

For the purposes of SBT analyses, accurate size measurements of SBT are required. SBT should be selected in a manner to ensure within strata randomness. For example, for large numbers of fish caught in a single operation (e.g., a purse seine vessel) a systematic sampling may be appropriate

The actual number of fish should be spread throughout as many separate fishing operations as possible. For example, it is nearly always the case that sampling 20 fish (randomly) from 10 operations is much better than sampling 200 fish from every 10<sup>th</sup> operation. The required actual number of samples should be re-evaluated from time to time and as needs change.

- Species<sup>5</sup>
- Life status category<sup>10</sup>
- Length (for SBT, fork length measured on straight length, rounded up to the centimetre<sup>11</sup>)
- Length unit
- Length code (fork length, eye fork, etc.)
- Length, lower jaw-fork length
- Whole weight (kg), if possible. This is the measured weight before processing as opposed to a calculated whole weight.
- Processed weight (kg)
- Processed State<sup>7</sup>
- Sex (F=female, M=male, I=indeterminate, D= not examined)
- Samples taken, specifying:
  - A unique identification number given to the sample,
  - The type of samples taking, including: whole specimen, or samples of otoliths, scales, vertebrae, stomach, muscle, tissue, gonads, [feathers](#), [bird bands](#) etc.)
  - [Any additional details that may explain the capture of the sample \(e.g. for seabirds the specific mitigation at the time of capture\)](#)

**F) SBT Tag recovery information**

Some of the data recorded here duplicates data that already exists in the previous categories of information. This is necessary because tag recovery information may be sent separately to other observer data.

- Observer's name
- Vessel's name
- Vessel's call sign
- Vessel flag
- Collect and provide the actual tags
- Tag colour

<sup>10</sup> The observer program will, as a minimum, distinguish the following life status categories: dead and damaged; dead and undamaged; alive and vigorous; and unknown.

<sup>11</sup> Length should be rounded (not truncated) to the nearest centimeter. For example, 62.4cm becomes 63cm and 62.5cm becomes 63cm (63 cm for both cases).

- Tag numbers (The tag number is to be provided for all tags when multiple tags were attached to one fish. If only one tag was recorded, a statement is required that specifies whether or not the other tag was missing)
- Date and time of capture (UTC)
- Location of capture (latitude+N/S and longitude+E/W to 1 minute of accuracy)
- Length (fork length, rounded up to the nearest centimetre<sup>11</sup>)
- Processed Weight (kg.)
- Processed State<sup>7</sup>
- Details of samples taken, specifying:
  - A unique identification number given to the sample,
  - The type of samples taking, including: whole specimen, or samples of otoliths, scales, vertebrae, stomach, muscle, tissue, gonads, etc.)
- Sex (F=female, M=male, I=indeterminate, D=not examined)
- Condition of recaptured fish and their life status
- Whether the tags were found during a period of fishing that was being observed (Y/N)
- Reward information (e.g., name and address where to send reward)

## HIERARCHIES FOR DATA COLLECTED BY SPECIES AND SBT DATA

This annex provides a guideline for the collection of data by observers to enable prioritising of observer activities.

The flow of the main data collection activities are:

### *Fishing operation information*

- All vessel and shot information

### *Monitoring of hauls*

- Record time and species caught
- Record whether the specimen was retained or discarded (with life status)

### *Monitoring of sets*

- To collect counts of seabird abundance around the vessel when setting (using standard counting practices)

### *Biological sampling*

- Collect data on length and whole and/or processed weight (including processed state)
- Check for presence of tags
- Record sex
- Collect biological samples
- Take photos, in particular to facilitate the identification of ERS

Both the monitoring of hauls and the biological sampling procedures should be prioritised among species groups as follows:

Species	Priority (1 is the highest)
SBT	1
Other tunas, billfishes, Gasterochisma, and sharks	2
All other species	3

“other tunas” means all *Thunnus* species except SBT

The allocation of observer effort among these activities will depend on the type of operation and setting. The size of sub-samples relative to unobserved quantities (e.g., number of hooks examined for species composition relative to the number of hooks set) should be explicitly recorded under the guidance of member country observer programs.

## **FORMAT OF NATIONAL REPORT SECTIONS ON DEVELOPMENT AND IMPLEMENTATION OF SCIENTIFIC OBSERVER PROGRAMS**

### **REPORT COMPONENTS**

The observer program implementation report should form a component of the annual National Reports submitted by members to the Scientific Committee. This report should provide a brief overview of observer programs for SBT fisheries, and is not intended to replace submitted papers containing proper analyses of collected observer data. This observer program report should include the following sections:

#### **A. Observer Training**

An overview of observer training conducted, including:

- Overview of training program provided to scientific observers.
- Number of observers trained.
- Summary of qualifications / training and years of experience of the observers deployed in SBT fisheries during the past year.
- A copy of the latest version of relevant manuals in their original language for reference

#### **B. Scientific Observer Program Design and Coverage**

Details of the design of the observer program, including:

- Which fleets, fleet components or fishery components were covered by the program.
- How vessels were selected to carry observers within the above fleets or components.
- How was observer coverage stratified: By fleets, fisheries components, vessel types, vessel sizes, vessel ages, fishing areas and seasons.

Details of observer coverage of the above fleets, including:

- Components, areas, seasons and proportion of total SBT catch, specifying units used to determine coverage.
- Total number of observer employment days, and number of actual days deployed on observation work.

#### **C. Observer Data Collected**

List of observer data collected against the agreed range of data set out in Attachment 1. In broad structure this would include:-

- Effort data: Amount of effort observed (vessel days, sets, hooks, etc), by area and season and % observed out of total by area and seasons
- Catch data: Amount of catch observed of SBT and other species (if collected), by area and season, and % observed out of total estimated SBT catch by area and seasons
- Length frequency data: Number of fish measured per species, by area and season.
- Biological data: Type and quantity of other biological data or samples (otoliths, sex, maturity, Gonosomatic index, etc) collected per species.
- The size of sub-samples relative to unobserved quantities.

**D. Tag Return Monitoring**

Number of tags returns observed, by fish size class and area.

**E. Problems Experienced**

- Summary of problems encountered by observers and observer managers that could affect the CCSBT Observer Program Standards and/or each member's national observer program developed in the light of the Standards.



## ERSWG Consideration of the Recommendations from the 2014 Performance Review of the CCSBT

Original recommendation	2014 Performance review recommendation	ERSWG11 recommendation
<p>Make the maximum effort to implement the items which have been identified and prioritised by the Extended Scientific Committee in the CCSBTs Scientific Research Program (Attachment 9 of the SC12 Report)</p>	<p><b>PR-2014-7:</b> The CCSBT could consider the feasibility of a collaborative programme (between RFMOs and institutions competent in biodiversity conservation) to assess ex ante the likely impacts of climate change on the tuna ecosystems, the SBT, the ERS, their productivity, distribution and resilience. The outcome of this work would indicate which ocean parameters could be usefully monitored to better inform the Meta Rule of the MP Process.</p>	<p>The ERSWG supported this recommendation noting that the ecosystem approach is growing in importance and requires collaboration. This recommendation has been added to the ERSWG's workplan.</p>
<p>Assess and monitor, directly or with other RFMOs, the risks and impacts on ERS and adopt a mitigation strategy.</p>	<p><b>PR-2014-8:</b> The CCSBT should specify the mitigation strategies for each ERS, area and fishery with their objectives (short and long-term), management and enforcement measures, and performance assessment. Considering the amount of work this represents, each strategy should also specify the order of priority given by the CCSBT to the different ERS, areas and fisheries, and it should record its rationale for these decisions.</p>	<p>The ERSWG strongly supported this recommendation and viewed it as a high priority. Links were noted between this recommendation and recommendations 25 and 32. The work could be conducted in collaboration with other tuna RFMOs.</p>
<p>Develop a strategy to collect and share data between CCSBT members and RFMOs.</p>	<p><b>PR-2014-10:</b> Based on the above the original SA recommendation might be considered as completed. However the PR suggests maintaining it as a leading title under which for more specific recommendations might be nested as need arise, e.g. regarding the SBT catches in recreational and artisanal fisheries.</p>	<p>The ERSWG supported the original recommendation noting that limited data sharing in this context reduces the working group's effectiveness. The ERSWG does not consider the original recommendation to be complete.</p>
<p>Clear standards are to be set on the type of data and level of detail to be provided by members [and cooperating non-members], in order to ensure the science process has the information it requires.</p>	<p><b>PR-2014-11:</b> More efforts need to be made to resolve the data confidentiality (regarding observers and operational fishery data) in order to improve the resolution and accuracy of the assessments and precision of the scientific advice.</p>	<p>The ERSWG supported this recommendation and noted that it would be very beneficial.</p>

Original recommendation	2014 Performance review recommendation	ERSWG11 recommendation
<p>Commercial confidentiality should no longer limit the access to data within the CCSBT. Members should make every effort to ensure that domestic constraints on data provision will not undermine the conservation and management efforts by CCSBT. Members and Cooperating Non-Members fully comply with the confidentiality agreements and provisions within the CCSBT.</p>	<p><b>PR-2014-13:</b> As long as the confidentiality problem will hamper the quality of the scientific assessment efforts CCSBT should continue to improve the accessibility of “confidential” data for this purpose, with appropriate safeguards. A time limit should be adopted in the data confidentiality rules, putting most if not all data in the public domain after a given period of time sufficient to reduce sufficiently or eliminate any risk from its broader use.</p>	<p>The ERSWG supported the first sentence of this recommendation, in the context that the data needs to be used in a collaborative approach, but had reservations about making data public after a set period of time.</p>
<p>Range of recommendations on data collection and sharing.</p>	<p><b>PR-2014-14:</b> It is recommended that the SAWG recommendations be carefully examined and integrated in the data collection and sharing agenda.</p>	<p>The ERSWG found it difficult to respond to this as it did not have the suite of SAWG recommendations before it.</p>
<p>Achieve a better balance between the scientific efforts dedicated to SBT on the one hand and ERS on the other.</p>	<p><b>PR-2014-15:</b> The above recommendation is important and is probably a long-term one with implications for research but also for management. However, because of the subjectivity of the concept of balance and its potential financial implications, it should be used as a “chapeau” and be complemented by more specific ones, related to specific species/areas requiring more attention.</p>	<p>The ERSWG supported this recommendation and noted that it was fundamental to moving towards an ecosystem approach. It was also noted that this type of balance is relevant to observer programs and the time observers spend on ERS activities. The working group noted that it has been valuable having an independent chair and that aligning closely to the ESC model (such as having independent experts) may help to progress work more rapidly. The ERSWG noted the value of having independent experts at the SMMTG meeting.</p>
<p>In light of the requirement to focus on future information with which to assess the stock status of SBT, the number and skill sets of independent experts required in support of the scientific process should be reviewed.</p>	<p><b>PR-2014-17:</b> Assess the eventual gaps in scientific skills and proceed to fill them through recruitment (including of new/complementary profiles in the Independent Panel) and capacity building in partner countries.</p>	<p>This recommendation was supported by the ERSWG. The ERSWG noted the ideas on capacity building developed at the SMMTG and ERSWG and that these are likely to come to fruition through the Birdlife International component of the ABNJ Tuna Project.</p>

Original recommendation	2014 Performance review recommendation	ERSWG11 recommendation
<p>- Develop research capacity in developing Members' countries</p>	<p><b>PR-2014-24:</b> This subject is important for the future of the CCSBT decision making progress and legitimacy and should be elevated to a continuing recommendation. The direct role of CCSBT might be limited (by its funding and own capacity to train) but it could help identify needs, promote assistance and monitor capacity-building activities directly related to the fulfilment of its mandate.</p>	<p>The ERSWG supports capacity building as an important endeavour. The CCSBT should seek to fund such work from both its own resources and external sources wherever possible. It was noted that ACAP had a secondments grant program specifically aimed at capacity building.</p>
<p>No specific recommendations</p>	<p><b>PR-2014-25:</b> It is recommended to bring together all the elements presently related to ERS to elaborate a proper policy and management strategy for ERS, adopting clear objectives as well as reference values or trends, limits and targets, against which performance could be assessed. Better use of observers would improve the efficiency of the policy.</p>	<p>The ERSWG strongly supported this recommendation and regarded it as high priority, noting that this has links to recommendation 8. Harmonisation with other tuna RFMOs should be considered.</p>
<p>Strengthen conservation and management measures to minimize harmful impacts of SBT fisheries on non-target populations and their ecosystems and ensure long-term sustainability, using the best scientific evidence available. In particular: Increase attention on sharks, seabirds, turtles and mammals (KIII.5.b.f), minimizing the impact of fishing (KII.10; KII.11). Assess and manage sharks (KII.11; KII.1f; KIII.5.b.d). Require the use of on-board observers to collect discards data (KIII.5.b.a);</p>	<p><b>PR-2014-31:</b> There is obviously a trade-off in the use of the observers' time which affects the precision of the data (and ensuing assessments) of SBT and ERS respectively. Although the detailed data collected eventually by observers is not known, a minimal assessment of the state of the ERS (or contribution to such assessment in a collaborative framework) will probably require more ERS data to be collected. The use of video cameras might be a useful assistance to the observer.</p>	<p>The ERSWG noted that the workload of observers is an issue, but is one of the cheapest options when considering alternatives to reducing uncertainty in risk assessments. This recommendation should not be limited to video cameras. The use of e-monitoring and e-reporting can also be useful in reducing the workload of observers.</p>

Original recommendation	2014 Performance review recommendation	ERSWG11 recommendation
<p>Ensure that [management] measures reflect international agreements, tools and guidelines to reduce bycatch, including the relevant provisions of the FAO Code of Conduct, the IPOAs for Seabirds and Sharks and the FAO guidelines on sea turtles. (BCWG 2010).</p>	<p><b>PR-2014-32:</b> The CCSBT relies on its members to comply with non-CCSBT institutions requirements and the degree of control or verification by CCSBT of the effectiveness is not clear and possibly insufficient. Formally adopting the relevant FAO IPOAs, adapting them to regional plans of Action (RPOAs), and instituting an implementation framework would be an efficient way to align CCSBT management practices with the international standards while strengthening the purely voluntary FAO instruments.</p>	<p>The ERSWG supported this recommendation and noted that the FAO IPOAs are useful resources that provides guidance in a number of areas and the FAO best practice guidelines provides a useful framework. It was also noted that this recommendation is linked to recommendations 8 and 25, and that this recommendation should be considered in the context of the limited resources of Members.</p>
<p>Adopt the following principles reflecting best practice: bycatch avoidance and mitigation measures should be: (1) binding, (2) clear and direct, (3) measureable, (4) science-based, (5) ecosystem-based, (6) ecologically efficient (reduces the mortality of bycatch), (7) practical and safe, (8) economically efficient, (9) holistic, (10) collaboratively developed with industry and stakeholders, and (11) fully implemented.</p>	<p><b>PR-2014-33:</b> The real extent of the problem (if any) in relation of turtles and mammals should be transparently assessed by the ERSWG. The overall policy in relation to ERS, summarized in the Strategic Plan, provides the higher level frame for the ERS part of a future management plan.</p>	<p>The ERSWG noted that the ERS part of a management plan should cover all ERS, including turtles and mammals, and the relative priority of species groups should be assigned in the future.</p>
	<p><b>PR-2014-34:</b> As mentioned in the PR-2008, the most effective way to reduce collateral impacts on ERS is through binding measures implemented by members and cooperating non-members and the duty to do so is established through the commitments made by governments in other fora to use the CCSBT and other RFMOs for just such purposes. The commitments are referred to also in the Kobe criteria a, h, and i.</p>	<p>The ERSWG commented that any progress in this direction needs to be resolved at the Extended Commission level.</p>
<p>Acknowledging the 2007 Kobe commitment to consistent ROP standards, the CCSBT should align its observer program with those of other RFMOs which also have an observer program such as CCAMLR and the IOTC.</p>	<p><b>PR-2014-44:</b> The CCSBT should accelerate its efforts to strengthen its Scientific Observer Standards and ensure they are harmonized with those of neighbouring RFMOs with respect to ERS observer data. The CCSBT should also give serious consideration to the development of a ROP, perhaps through forging a relationship with the WCPFC to allow for mutual recognition or cross endorsement of observers, as the WCPFC and IATTC have done.</p>	<p>The ERSWG strongly supported this recommendation and considered it as high priority. The January 2015 meeting of the joint tuna RFMO bycatch technical working group for harmonisation of longline bycatch data collected by tuna RFMOs was recognised in this context.</p>

Original recommendation	2014 Performance review recommendation	ERSWG11 recommendation
<p>- There are significant opportunities for the CCSBT to work more closely with and to harmonise measures with other RFMOs, especially with the other tuna- RFMOs, and this should be a priority area for the CCSBT.</p> <p>- The CCSBT should add combating IUU fishing activities to the list of crosscutting issues affecting all tuna RFMOs, as well as monitoring and regulating transshipment, particularly given CCSBT's geographical overlap with the Indian Ocean Tuna Commission and the Western and Central Pacific Fisheries Commission.</p>	<p><b>PR-2014-56:</b> Given the reliance of the CCSBT, in many ways, on cooperative relationships with other RFMOs for “harmonizing” with (and using directly) a number of those neighbouring RFMOs’ measures, the work called for by the Kobe process and its 2010 workshops is particularly relevant. The CCSBT should look seriously for opportunities to re-invigorate discussions among its neighbouring RFMOs to work more closely to implement the Kobe recommendations. Key areas of collaboration include: more systematic exchange of data and information (interoperable databases); additional harmonization of measures; conducting more joint scientific workshops; increasing coordination of compliance work, particularly to combat IUU fishing and conserve and manage ERS; large-scale tagging programmes; ecosystem approach implementation; large scale ecosystem-based modelling; Management Strategy Evaluation; harmonisation of MCS systems; common formats for assessing compliance (with data reporting; infringements, etc.); capacity-building (e.g. training courses); and development of common positions at IUCN, CITES, CBD, and the UNGA.</p>	<p>The ERSWG strongly supports this recommendation and notes that this sort of cooperation is essential to undertaking broader scale assessments.</p>

## Workplan from ERSWG11, March 2015

CCSBT Strategic Plan				
Tasks in the CCSBT Strategic Plan	Priority	Action items	Due date	Responsibility
Implement the Recommendation to Mitigate the Impact on ERS of Fishing for SBT <sup>1</sup>	High	(1) Obtain updates from ACAP and Birdlife International including population status summaries and best practice mitigation measures in advance of ERSWG meetings.	Standing item for future meetings	Secretariat
		(2) Update the seabird ERA report findings.	ERSWG12	New Zealand to lead with contributions from other Members
		(3) Consider the development papers on ERA for non-seabird species (in particular sharks) caught in SBT fisheries.	ERSWG12	Members / CNMs
		(4) Contribute to a proposed stock assessment for porbeagle sharks to be led and coordinated by the shark component of the ABNJ Tuna Project.	Contributions as per project plan. Progress report expected at ERSWG12	Japan, New Zealand, Australia, Korea, Taiwan and South Africa
		(5) Obtain an update from IOSEA-Turtles on population status and best practice mitigation measures in advance of ERSWG meetings.	Standing item for future meetings	Secretariat
		(6) Obtain updates from CMS-sharks & CITES on changes to species listed, population status and any relevant data and information on best practice mitigation measures for shark species.	Standing item for future meetings	Secretariat
		(7) Develop criteria for the definition of 'high risk areas' for seabirds and use them to identify such areas.	ERSWG12	Members / CNMs
Review the implementation of the Recommendation on ERS	Medium			
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	(8) Annual ERS Data Exchange.	Standing item for future meetings	Members / CNMs
		(9) Produce agreed summaries of ERS data provided in Data exchange.	Standing item for future meetings	Secretariat
		(10) Review Scientific Observer Program Standards.	Standing item where there is new information or requirements of relevance.	Members / CNMs
		(11) Provide advice on life status codes for seabirds and sharks for inclusion in Scientific Observer Program Standards.	ERSWG12	ACAP (for seabirds) ? for Sharks

<sup>1</sup> 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	Action items	Due date	Responsibility
		(12) Provide updates on development of electronic monitoring systems for obtaining data on ERS.	Ongoing	Members / CNMs
Assess how well the mitigation measures adopted by other area-based RFMOs mitigate the risks caused by fishing	Medium	(13) Assess how well the mitigation measures adopted by other area-based RFMOs mitigate the risks caused by fishing.	Ongoing	Members / CNMs
Where necessary, identify and adopt additional mitigation measures to manage risk taking into account the coordination and harmonisation with other RFMOs	Medium	(14) Provide reviews of any new information on mitigation measures.	Ongoing	Members / CNMs
		(15) Consider conducting experiments to identify new mitigation measures or improve existing mitigation measures that may be effective in reducing bycatch of ERS.	Ongoing	Members / CNMs
		(16) Provide an update on ERS mitigation measures of other tuna RFMOs.	Standing item for future meetings	Secretariat
		(17) Exchange information and collaborate among Members and with NGOs for effective and smooth implementation of mitigation measures.	Ongoing	Members / CNMs
Coordination and harmonisation with area-based RFMOs, including on data reporting (see above)	Medium	(18) Liaise with the chair of the Joint Bycatch Technical Working Group (JBTWG) on progressing the work of that group.	Standing item for future meetings	Chair ERSWG
		(19) Provide JBTWG participants with any publicly available information, including papers submitted by Members to the ERSWG, that they seek.	Ongoing	Secretariat
		(20) Cooperate with the other tuna RFMOs to measure the effect of mitigation measures in all these fisheries.	Ongoing	Secretariat
		(21) Obtain final report of the January 2015 workshop on harmonising observer standards for longlines and circulate to Members/CNMs.	ERSWG12	Secretariat
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	(22) Consider conducting analyses, and provide papers and reports, on predator and prey species which may affect the condition of the SBT stock, including the potential impacts of other fisheries on such species.	Standing item for future meetings	Members / CNMS
New items not yet priorities or aligned with the Strategic Plan		(23) Provide a synthesis of information on the oceanographic conditions that characterise SBT fishing grounds.	ERSWG12	Members / CNMS
		(24) Assess the likely impacts of climate change on the tuna ecosystems including the productivity, distribution and resilience of SBT and ERS.	Ongoing	Members / CNMS
		(25) Provide more detailed guidance on priorities for seabird-related tasks including the appropriate allocation of observer time and standard methods for counting the numbers of seabirds around vessels.	ERSWG12	Members / CNMS

CCSBT Strategic Plan				
Tasks in the CCSBT Strategic Plan	Priority	Action items	Due date	Responsibility
		(26) Approach WCPFC with a request that BMIS be used to facilitate access to documents, formats and procedures related to observer programs and the collection of data on ERS.	Post ERSWG11	Secretariat
		(27) Approach CCSBT's Compliance Committee with a request for information on the types of data it collects on fishing vessels that might be of use for the work of the ERSWG.	Post ERSWG11	Secretariat
		(28) Review the results of (26) to (i) request summaries of any data that the ERSWG considers might inform its advice to the Commission about the effectiveness of mitigation measures, and (ii) provide advice to the Compliance Committee on how changes to the data it collects might better facilitate the work of the ERSWG.	ERSWG12 & ERSWG13	Members / CNMS
		(29) Prepare a description of the availability and resolution of SBT fishing effort data including the assumptions used in raising that data and options for improving the quality of such effort data.	Post ERSWG11	Secretariat
		(30) Approach the secretariats of other tuna RFMOs with a request that they produce similar summaries to facilitate the assessment of cumulative impacts on seabirds and other ERS across tuna RFMOs.	Post ERSWG11	Secretariat
		(31) Submit a request to the ABNJ Tuna Project that it coordinate the responses to "30" and through it to WCPFC's BMIS system to facilitate access to them.	Post ERSWG11	Secretariat
		(32) Prepare an overview of potential methods for calculating bycatch rates and extrapolating these to total numbers of seabirds killed.	ERSWG12	New Zealand and ACAP
		(33) Develop estimates of background bycatch rates (pre bycatch mitigation) using retrospective analyses as outlined in the ERSWG11 report	ERSWG12	Members / CNMS