



Australian Government

Department of Agriculture, Fisheries and Forestry

REVISED PROPOSAL FOR VERIFYING CATCH AND EFFORT DATA THROUGH A CCSBT SCIENTIFIC OBSERVER PROGRAM

In recent years, the Extended Commission for the Conservation of Southern Bluefin Tuna (CCSBT) has re-iterated the importance of verifying catch and effort data to improve confidence in the key data sources for the stock assessment (Operating Model) and Management Procedure. Australia presented a scoping study on a regional observer program to CCSBT at its annual meeting in 2010 ([Attachment A](#)), and subsequently to the special meeting of the Commission in August 2011. The broad objectives of this scoping study were:

1. Verify catch and effort data used as key data sources in the Operating Model and Management Procedure (particularly longline data)
2. Improve information on interactions with ecologically related species (ERS)

Members have provided some feedback on Australia's initial scoping study, noting that while the objectives of the study were important, the cost estimate of the proposal was prohibitive, and that perhaps there were opportunities to verify CCSBT catch and effort data through the CCSBT catch documentation scheme (CDS) or the existing regional observer programs in the Western and Central Pacific Fisheries Commission (WCPFC) or Indian Ocean Tuna Commission (IOTC).

While these are sensible suggestions, CCSBT would be somewhat limited in its ability to build on these schemes at present for several reasons, described below:

CDS

The current catch monitoring form provides aggregated data only (aggregated by net weight of product type, month, and CCSBT statistical area); similarly, the catch tagging form provides aggregated temporal/spatial data only (aggregated by month/CCSBT statistical area) and does not apply to processed product. Neither effort data nor discards are recorded through the CDS. As such, the CDS provides no additional advantage over existing data provision requirements for the purpose of verifying catch and effort data for the Operating Model or Management Procedure.

WCPFC and IOTC regional observer programs

While many advantages are to be gained through utilising the regional observer programs established by WCPFC and IOTC, neither program was designed with CCSBT objectives in mind. Notable shortcomings in a CCSBT context are:

- At present, neither program would meet the target observer coverage of 10% effort, adopted by CCSBT7 in April 2001;
- IOTC Resolution 11-04 on a Regional Observer Scheme does not require observers to record information on the deployment of mitigation devices, including mandatory tori lines;
- Insufficient requirements for recording interactions with ERS, particularly seabird, shark and sea turtles.

Taking into account the feedback from other Members on the strengths and weaknesses of the scoping study at Attachment A, Australia has drafted a workplan for implementing priority measures to improve the verification of catch and effort data through the CCSBT observer program in the most effective and practical manner.

The workplan separates issues into short-, medium- and long-term priority, where short-term elements are to be implemented in either the 2012 or 2013 fishing seasons. A draft resolution, for consideration by CCSBT at its 2011 annual meeting, provides a schedule of implementation for these elements (Attachment B).

Workplan

Short-term (2012–13 fishing seasons)

- Adopt binding measure on minimum observer coverage of 5 per cent of effort, to be in effect as of 1 January 2012, maintaining a target coverage of 10 per cent.
- Adopt binding measure requiring the exchange of observers between national programs, to be in effect as of 1 January 2012.
- Revise the minimum data fields for CCSBT observer reporting and develop a CCSBT observer reporting template, to be in effect as of 1 January 2013 (avoiding duplication with existing WCPFC and IOTC reporting templates to the extent possible)
- Adopt binding measure to submit observer data (as specified in the CCSBT observer template) to the CCSBT Secretariat, for the purposes of making the data available to the Extended Scientific Committee and Compliance Committee and in accordance with the *CCSBT Rules and procedures for the protection, access to, and dissemination of data*, to be in effect as of 1 January 2013.
- Adopt mandatory real-time monitoring on large-scale tuna longline vessels (as defined in CCSBT 2008 Resolution on Establishing a Program for Transshipment by Large-Scale Fishing Vessels), to be in effect as of 1 January 2013.

Medium-term (2014–16 fishing seasons)

- Review and update existing CCSBT training requirements for observers
- Develop on-board reference material additional to the existing CCSBT ERS pamphlets
- Develop guidelines for the rights and responsibilities of observers, vessel operators, masters and crew
- Disseminate knowledge on the use of electronic monitoring and reporting technologies
- Develop performance measures for the CCSBT observer program

Longer-term (2017 and beyond)

- Accreditation of national observer programs against a CCSBT standard
- Develop a scheme for the statistical stratification and allocation of observers to attain 10% coverage of effort in all areas and at all times
- Develop minimum standards for the insurance of international observers
- Implementation of electronic monitoring and reporting technologies
- Transfer administrative responsibilities for deployment of observers to the CCSBT Secretariat, and consider the appointment of a:

- Regional Observer Program Coordinator to the Secretariat, responsible for the development of standards and procedures, and the recruitment, deployment, briefing and debriefing of observers
- Regional Observer Program Data Analyst, responsible for statistical data analyses for quality control, data integrity and performance monitoring

Attachment A



Australian Government

**Australian Bureau of Agricultural and
Resource Economics – Bureau of Rural Sciences**

Scoping study for the development of a CCSBT Regional Observer Program

Working Paper CCSBT-ESC/1009/30 prepared for the Fifteenth Meeting of the
Scientific Committee (SC15) of the Commission for the Conservation of Southern Bluefin Tuna,

4–10 September 2010, Taipei, Taiwan

Executive summary

The 17th meeting of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) in 2010 will be seeking to adopt a management procedure (MP) to be implemented in 2011. In order for Members and Co-operating Non-Members to have greater confidence in key data inputs to the MP, particularly longline catch-per-unit-effort (CPUE) data, and noting the shortcomings of the CCSBT Scientific Observer Program that has been operated by Members since 2002, it is timely to consider the development of a Regional Observer Program (ROP). An ROP could build on current national observer programs by facilitating the international exchange of national observers; these international observers could be augmented by independent observers from non-Members.

Introduction

Recent initiatives in the Extended Commission of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) have re-iterated the importance of having a Regional Observer Program (ROP), especially as a way to verify key data inputs for the management procedure (MP). The main aim of this paper is to present the context and need for an ROP and to provide several options for implementation, to support future application of the MP.

There is an ongoing need for all Members¹ to continue to improve the accuracy and validity of their catch and effort data. Initiatives to improve data veracity in the farm sector include the planned 2011 commercial trials of stereo video. An ROP would provide an independent means to verify longline catch-per-unit-effort (CPUE), particularly on the high seas, which is a key data input to the southern bluefin tuna (SBT) Operating Model and the proposed MP.

CCSBT 'Management Procedure' and the need for an ROP

There are several reasons to build confidence in the key data sources used for stock assessments and analyses of management options, particularly for longline catch and effort:

- Under an agreed MP, Members will be expected to commit to pre-determined assessment procedures and decision rules.
- Outputs of stock assessments and analyses using the Operating Model, which will guide the application of the MP, depend to a large extent on longline CPUE. It is therefore important that Members have confidence in the catch and effort data input to the models.
- The 4th Meeting of the Compliance Committee (CC4) in 2009 noted the need for an 'improved level and representativeness of observer coverage' and the 'potential future introduction of a regional observer program' (ROP).
- The *Resolution on action plans to ensure compliance with Conservation and Management Measures*, adopted at the 16th Annual Meeting of CCSBT (2009) calls for Members to improve 'verification of catch data through scientific observers on fishing vessels' with 'coverage of 10% in terms of effort' and to explore development of an ROP.
- In 2008 the Report of the Performance Review Working Group² (PRWG) highlighted a number of areas in which performance of the CCSBT could improve. One of the monitoring, control and surveillance (MCS) aspects emphasised in the review was the development of 'effective measures relating to ... a regional observer program'.
- The Report of the Independent Expert³ (2008) noted 'CCSBT has not yet implemented a regional observer program'.
- The 2nd meeting of the Strategy & Fisheries Management Working Group (April 2010) noted that 'All [compliance action] plans presented showed improvements in one or more areas such as ... plans for achieving or maintaining at least a 10% observer coverage in 2010'. However, 'concern was expressed that verification and validation of catches was not sufficient and that in these instances, more effort was required in this area'.

¹ For the purpose of this document, use of the term 'Members' may include Cooperating Non-Members

² www.ccsbt.org/docs/pdf/meeting_reports/ccsbt_15/report_of_PRWG.pdf

³ www.ccsbt.org/docs/pdf/meeting_reports/ccsbt_15/PerformanceReview_IndependentExpertsReport.pdf

- The draft CCSBT Compliance Action Plan Template facilitates improved reporting of catch, bycatch and discards, and implementation of the Catch Documentation Scheme (CDS) through catch monitoring and tagging. It also notes several aspects in relation to scientific observers, detailed in Table 1.

Table 1. Section of the draft Compliance Action Plan Template concerning scientific observers

<i>Scientific Observers</i>	<p><i>Specify:</i></p> <p>i. <i>The % of the SBT catch and effort to be observed:-</i></p> <p>ii. <i>The system to be used for comparisons between observer data and other catch monitoring data in order to verify the catch data:-</i></p> <p>iii. <i>Excluding the coverage, specify whether the observer program will comply with the CCSBT Scientific Observer Program Standards. If not, describe the non-compliance. Also indicate whether there has been any exchange of observers between countries:-</i></p> <p>iv. <i>What information on ERS will be recorded by observers:-</i></p> <p>v. <i>Who the observer reports will be submitted to:-</i></p> <p>vi. <i>Timeframe for submission of observer reports:-</i></p> <p>vii. <i>Other relevant information (including plans for further improvement – in particular to reach coverage of 10% of the effort):-</i></p>
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Limitations of the current CCSBT ‘Scientific Observer Program’

In 2001, CCSBT7 endorsed the recommendation of the 5th Meeting of the Scientific Committee that the Scientific Research Plan (SRP) incorporate a Scientific Observer Program (SOP) as a priority element. The SOP Standards (Appendix 1) were developed to harmonise the data collection protocols of national observer programs, including coverage levels, forms, training standards, etc. Responsibility for the operation of the SOP, both on the high seas and in domestic fisheries, lies with the Member whose flag is flown on the vessel. Members commenced implementing the SOP standards in their national observer programs in 2003–2004. However, the SOP has been unsatisfactory for the following reasons:

- coverage rates of national fleets have often been below the specified 10% level for catch and effort (Table 2), especially for ‘effort’ as quantified by the number of hooks.
- as the SOP Standards do not clearly state that 10% is a *minimum* coverage level, there has been no sanction on Members with consistently low levels of coverage.
- while it was agreed that exchange of ‘information’ obtained from the SOP should take place through the Secretariat, there was no requirement for sharing of observer data.
- despite CCSBT17 calling for ‘exchange of observers between countries on a regular basis’ Members still predominantly use their own nationals as observers, which does not promote transparency among Members.

Consequently, while most Members have reported the coverage rates of their national observer programs and several Members have presented analyses of their observer data, there have been few studies using observer data to verify catch and effort data used in the Operating Model, no comparative studies based on sharing observer data among Members, and no studies based on observer data that are independent of the flag state's observer program (except for the coverage of Japanese charter vessels by New Zealand observers when fishing in the New Zealand Exclusive Economic Zone – EEZ).

The ROP would improve on national observer programs by ensuring that observers are impartial, independent and qualified according to the CCSBT standards. The ROP could include transfer of power to the Commission, or an appropriately experienced independent scientific observer provider, to monitor and manage deployment of observers among fleets, develop priorities for the program, and manage contracts and other administration, in order to overcome the limitations listed above. This would guarantee that the deployment of observers on vessels is adequately resourced and effectively coordinated and administered.

Table 2. Observer coverage rates by Member and year from national reports and research papers submitted to the Extended Scientific Committee. c: catch, v: vessels, h: hooks, d: days, s: sets, LL: longline, PS: purse seine, CH: charter, DM: domestic, na: not available, nd: no data.

Flag \ Year	2004	2005	2006	2007	2008	2009
Australia	5% cLL	63% cLL	89% cLL	23% cLL	34% cLL	23% cLL
	12% hLL	38% hLL	22% hLL	30% hLL	48% hLL	17% hLL
	9% cPS	10% cPS	6% cPS	12% cPS	15% cPS	14% cPS
	11% sPS	9% sPS	6% sPS	12% sPS	8% sPS	9% sPS
Japan (areas 7/8/9)	5%h	5%h	8%h	7%v 7%v 8%h	5%v	na
	na	9%v 2%h	9%v 2%h	28%c 9%v 2%h	nd	10%v
New Zealand	100% cCH	98% cCH	99% cCH	60% cCH	46% cCH	na
	100% hCH	89% hCH	88% hCH	55% hCH	45% hCH	
	15% cDM	9% cDM	9% cDM	16% cDM	9% cDM	
	6% hDM	12% hDM	6% hDM	11% hDM	15% hDM	
Taiwan	4%v	8%v	9%v	15%v	6%v	na
	4%h	12%h	10%h	15%h	7%h	

'Ecologically Related Species' and the need for an ROP

In the *Recommendation to Mitigate the Impact on Ecologically Related Species of Fishing for Southern Bluefin Tuna* adopted at the 15th Annual Meeting of CCSBT in 2008, the Commission expressed its concern 'that some seabird species, notably albatrosses and petrels, are threatened with global extinction'. CCSBT also recognised that 'fishing for southern bluefin tuna can cause incidental harm to other species such as sea turtles and sharks'.

The 2008 PRWG recommended that 'CCSBT needs to at the very least assess and have ongoing monitoring of the risks and impacts of SBT fisheries on ecologically related species (ERS) and adopt an appropriate mitigation strategy to address those risks and impacts'. This judgement was supported in the Report of the Independent Expert. Reliable estimation of the risk of adverse effects on ERS can only be achieved using observer data.

At the 8th Ecologically Related Species Working Group (ERSWG) meeting (2009) Members were reminded of the CCSBT's adoption of a Scientific Research Program incorporating a Scientific Observer Program. The ERSWG further recalled the observer coverage target of 10% for catch and effort; and that observer coverage shall be representative, and recommended that all Members make strenuous efforts to achieve these 'minimum' targets, improve the quality of data and meet the other requirements outlined in the Scientific Observer Program Standards (Appendix 1). The Kobe II Bycatch Workshop in June 2010 recommended that all tuna RFMOs 'Implement/enhance observer and port sampling programs with sufficient coverage to quantify/estimate bycatch', noting that 'Studies have shown that although 20% observer coverage is generally adequate to ensure very accurate estimates of the catch of target species, a greater coverage is needed to get similar accuracy of bycatch, which is rarer'.

In addition to the benefits in validating data used for SBT stock assessments and MP implementation, an ROP would therefore provide additional significant benefits in enabling the CCSBT to assess the impacts of SBT fishing on ERS, thereby meeting a significant short-coming in the operation of the Commission, as identified by the performance reviews.

Data Considerations

Data Fields

Historically, different observer programs have had different requirements for data collection, depending on the purpose of the particular program. Recently, international standards have developed through regional and sub-regional observer programs, notably the Western and Central Pacific Fisheries Commission (WCPFC) ROP.

The fact that these standards have been agreed to and adopted by those CCSBT Members that are members of WCPFC demonstrates that they are realistic and appropriate to tuna fisheries under international management.

It is recommended that as the ROP becomes operational, the minimum standard list of data fields to be collected should be the same as that required by the WCPFC (Appendix 3) and other relevant RFMOs.

Reporting on Compliance

Observers could also monitor and report on compliance with relevant CCSBT Resolutions and Recommendations, as well as those of the WCPFC and the Indian Ocean Tuna Commission (IOTC) when fishing in their Convention Areas.

To promote compliance with relevant resolutions and recommendations, observers could record incidences of non-compliance and report these to the flag state so the flag state can effectively monitor compliance and improve awareness of CCSBT measures among its fleets. Observers should not otherwise act or attempt to act in an enforcement capacity.

Data Management

To ensure that all Members benefit from the investment in the ROP, it will be important to ensure that ROP data are subject to robust data management systems and procedures that respect confidentiality requirements. Key data management principles include the following:

- Data are submitted in a timely manner and be verified and consolidated in a common database for subsequent use.

- Hard copy and digital observer data are stored in a physically and electronically secure environment.
- Data entry procedures implement quality controls through the use of automated data quality flags; use of these flags should not compromise estimation of observation error⁴.
- Further quality control measures are implemented following data analysis and presentation by Members, as recommended by the ERSWG, the Extended Scientific Committee, the Compliance Committee or the Commission.
- Consistent with practice in other ROPs, data collected under the CCSBT ROP should remain the intellectual property of the Member of the vessel from which they were collected unless they were collected within the EEZ of a coastal state, in which case they belong to that state.
- The 'Rules and Procedures for the Protection, Access To, and Dissemination of Data compiled by the CCSBT' should govern management of ROP data, with default classification as 'Operational Level Catch and Effort Data' (High Risk), pending further discussion; it may be necessary to develop a specific category for observer data.

Data Analysis

The primary purpose of data analysis for the ROP would be the estimation of longline CPUE indices for SBT and the comparison of these indices with those derived from logbook and aggregate data, thus providing verification of one of the key data inputs to the MP.

Additional data analyses may include *inter alia*:

- analysis of length-frequency composition of catch of SBT
- estimation of discard rates for SBT
- biological studies of SBT age, growth and reproduction
- identification and biological study of ERS
- estimation of interaction and fishing mortality rates for ERS
- analysis of compliance with RFMO Conservation & Management Measures, Resolutions and Recommendations
- evaluation of the effectiveness of RFMO Conservation and Management Measures, Resolutions and Recommendations.

Results of ROP data analyses should be presented to the Commission via the ERSWG, the Extended Scientific Committee and the Compliance Committee, as appropriate.

Data Sharing

One of the main reasons to have an ROP is to derive benefits from observations across the range of fishing vessels, fleets, areas and times comprising the fishery. It is therefore expected that ROP data would be sourced from individual Members in order to be shared with other Members.

Given the long history of the fishery, there would also be considerable benefit to sharing historical observer data collected by the national observer programs.

⁴ Data that are incorrect may still be entered but with an appropriate warning flag that alerts the user to the error but still allows them to proceed with analyses incorporating the erroneous data.

It is therefore recommended that during the interim period, Members should, through the Secretariat, commence the exchange and pooling of historical observer data and of new data generated by their ongoing national observer programs.

The 'Rules and Procedures for the Protection, Access To, and Dissemination of Data compiled by the CCSBT' should govern management of ROP data, with default classification as 'Operational Level Catch and Effort Data' (High Risk), pending further discussion; it may be necessary to develop a specific category for observer data.

Implementation Options

Key Principles

An ROP would supplement national observer programs, which may be biased in their coverage, by supplying additional international observers to ensure representative coverage of fleets, areas and fishing gears, facilitating data sharing and enabling verification both of commercial catch and effort data and of data collected by national observer programs.

Within 3 years the ROP could be progressively implemented with a minimum coverage level of 10% of catch and effort (number of hooks or sets).

During the interim period, the 10% minimum coverage level for catch and effort for national observer programs should continue to apply.

Each Member could determine the extent to which the ROP is implemented in addition to or instead of their own national programs. Members that cannot attain 10% coverage by their national observer program could increase ROP coverage of their fleet above the 10% level.

Given these principles, Members should collectively determine future target ROP coverage rates, as well as other operational characteristics, while promoting transparency and efficiency and progressively implementing the ROP over an interim period of not longer than 3 years.

Coverage Levels

Minimum coverage levels should be set for the ROP to ensure that sufficient data are collected to enable statistically robust estimation of population-level properties from the directly observed sample. Depending on the objective (i.e. catch vs. bycatch verification) the coverage levels required to enable statistically robust data analyses can vary from <10% to 100%. Sampling theory demonstrates that as coverage levels are increased from 0% to 20%, so the error in an estimate will decrease to 20% of its maximum value (Fig. 1; see [Lawson 2006](#)⁵). Therefore, the greatest improvement in statistical confidence per unit of increased coverage is achieved as coverage levels initially increase from 0% to 20%, after which each unit reduction in the error of the estimate will require ever greater observer coverage.

⁵ www.wcpfc.int/system/files/documents/meetings/scientific-committee/2nd-regular-session/statistics-swg-working-papers/SC2_ST_WP1.pdf

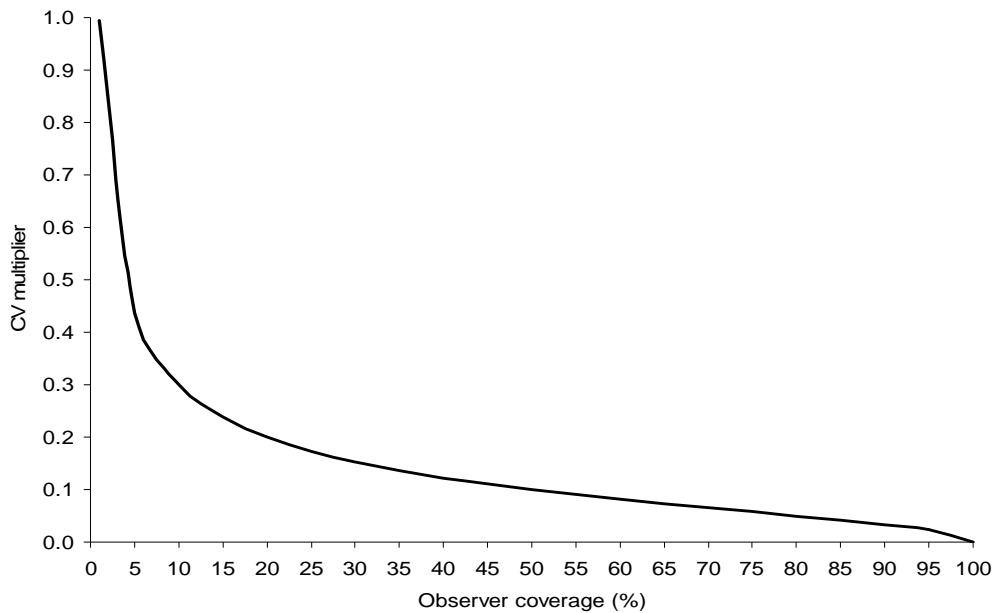


Fig. 1. Reduction in coefficient of variation (CV) of an estimate as observer coverage increases

For CCSBT, the initial priority for the ROP is to have adequate observer coverage to validate the catch and effort data used in the Operating Model and for applying the MP.

It is likely that an initial coverage level of 10% will be adequate for this purpose, provided that it is representative of all fleets, areas and fishing gears.

In practice, it is not a trivial exercise to achieve representative sampling and so overall coverage level may need to be higher to address any inevitable biases.

Simulations can be used to inform adjustment of coverage levels in the future, but the 10% minimum coverage level for the ROP should be recognised from the outset. During the interim period, while the ROP is progressively implemented, 10% could be a target coverage level; at the end of the interim period, 10% coverage could be a binding requirement.

For ERS, particularly for rare and endangered species, observer coverage levels may need to be higher than 10% to give scientific advice with statistical confidence. The Commission may therefore wish to increase ROP coverage levels in the future, if problem time-area strata or sectors are identified, so that robust analyses of fishing impacts upon ERS can be carried out.

Alternate means of monitoring, such as video cameras, may be a viable and more cost-effective option in the future, particularly if >10% observer coverage is required.

Administration and Staffing

The ROP would require a significant investment of resources and time from experienced professionals in fisheries monitoring, data management, data analysis and data entry. The program could either be administered by the Secretariat (with additional resources) or alternatively by an independent scientific observer provider.

The ROP could be staffed by ‘International Observers’ comprising designated observers from the national programs of Members, as well as other independent observers that meet the standards and follow the procedures of the ROP.

If the ROP functions alongside the national observer programs, implementing the same standards and with effective data sharing, then the overall benefit should be greater than from the national observer programs or the ROP alone.

Depending on whether and how data from the national observer programs are exchanged among members, international observers could either be authorised to work on any vessel fishing for SBT or only on vessels of a nationality different to their own.

There most likely will be significant preparatory work during the interim period in developing monitoring standards and reporting systems, databases and data entry systems. It is therefore necessary to anticipate what level of initial and ongoing support is required to achieve full implementation by the end of the interim period.

In addition to the observers themselves, there are additional roles that would need to be fulfilled, one way or another, in order to have good quality regional observer data stored in a secure environment and available to Members for analysis:

- Overall coordination of the ROP includes sourcing, deploying, briefing and debriefing of international observers, developing and maintaining ROP standards, and overseeing the development of databases and the processes for data entry. These tasks would fill a fulltime work load for a suitably qualified ROP Coordinator working with logistical and technical support.
- Detailed analysis to control the quality of the observer data is a necessary pre-requisite to the data being used for stock assessment. Issues of observer skill level, sampling and reporting constraints, may result in significant observation error, which is best considered within a statistical framework. Assuming that all Members had access to ROP data, this work could be distributed among Members and carried out by national scientific staff. However, the work may be better executed by an individual that fully understands the ROP and knows the international observers.
- The issue of data entry must be anticipated. There will be options available in terms of carrying out this work at the Secretariat or outsourcing the work to contractors, or even enabling observers themselves to enter and submit data electronically. These options have not been costed here but a provision has been made in the estimated budget to cover this work. It is expected that early in the interim period the anticipated data volumes can be estimated along with costings for the various options. There may also be trade-offs between cost and quality/security in the options available, and these aspects should also be considered.

Cost Considerations

Observer costs are best estimated by ‘sea day’, as the same daily cost is likely to be incurred regardless of vessel size, number of hooks, or other operational characteristics observed, and regardless of whether the vessel is fishing or transiting. The operational characteristics of some fleets (e.g. long vs. short trips) will make the

deployment of observers more or less cost effective: there can be downtime for observers that have travelled to a port to board a vessel that is not ready or able to put to sea because of bad weather or other constraints. The total costs for the ROP have been estimated using a daily cost per sea day of US\$550⁶, which includes observer salaries, travel to/from deployment, equipment and training. Data entry costs and salaries for two positions based at the CCSBT Secretariat are budgeted separately.⁷ The following two positions are suggested here:

- An ROP Coordinator, responsible for development of ROP Standards and Procedures, and the recruitment, deployment, briefing and debriefing of international observers.
- An ROP Data Analyst, responsible for statistical data analyses for quality control, data integrity, and performance monitoring.

In addition to salaries for Professional Officers, who would be paid at the appropriate salary level for United Nations Secretariat Staff in Australia (the budget estimate allows US\$200000 per position including overheads), it is also important to allow for data entry costs. More detailed analysis of the anticipated data volume is required to properly cost this aspect of the ROP, but an initial provision of US\$250,000 has been included in the budget estimate.

Although required observer coverage levels should apply to effort quantified as the number of hooks or sets, in order to estimate costs while allowing for time in transit and other ‘sea days’ that are not ‘fishing days’, it is best to quantify total fishing effort as ‘vessel days’. Vessel days have been calculated here as the product of the length of the fishing season and the number of vessels fishing, both of which are given in the respective annual reports of each Member. The number of ‘vessel days’ estimated for each Member are presented in Table 3. These may be overestimates for fleets that only occasionally target SBT during the season: the estimate for Australia corrects for this error but also allow for the inclusion of downtime.

Table 3. Estimates of total fishing effort (vessel days) by Member and sector. LL: longline, PS: purse seine.

For ‘Australia (LL)’ vessel days are calculated as $2 \times$ the number of vessel days when one or more SBT were caught, as the ratio of observed days to sea days (including downtime at port) is ca. 1:1

	length of fishing season (days)	number of vessels fishing for SBT	vessel days (days \times vessels)	proportion of total
Australia (LL)	150	15	600	1%
Australia (PS)	130	7	910	2%
Japan	300	125	37 500	63%
Korea	275	19	5 225	9%
NZ charter	120	4	480	1%
NZ domestic	120	31	3 720	6%
Taiwan	275	41	11 275	19%
Total annual effort (vessel days):			59 710	

Estimates of total cost for the ROP are given in Table 4. For 10% coverage of vessel days, the ROP would cost about US\$ 3.9 million. This compares with US\$4–6 million for the WCPFC Regional Observer Program, with 5% coverage of longliners and 100% coverage of purse seiners, and about US\$2 million for the Inter-American

⁶ <http://www.wcpfc.int/doc/wcpfcrop-iwg32009-07/cost-considerations-rop-observers>

⁷ WCPFC employs an ROP Coordinator and has approved an additional position of Data Quality Officer. WCPFC contracts with the Secretariat of the Pacific Community for data management. CCAMLR employs an Observer Data Analyst for its Program of International Scientific Observation.

Tropical Tuna Commission (IATTC) ROP⁸, and represents less than 1% of the global wholesale value for SBT (>US\$450 million⁹).

Table 4. Estimated total cost for a CCSBT Regional Observer Program

Salaries for ROP Coordinator & ROP Data Analyst, plus provision for data entry costs	Fishing days observed	Observer coverage	Cost of Observers	Total cost US\$ million
\$650,000	2 986	5%	\$1.6	\$2.3
	5 971	10%	\$3.3	\$3.9
	11 942	20%	\$6.5	\$7.2
	29 855	50%	\$16.3	\$17.0
	59 710	100%	\$32.7	\$33.3

Although cost estimates are based on total vessel days, as this is the likely determinant of observer costs, required observer coverage levels should be specified in terms of catch and effort and not as a percentage of vessels or total sea days. This would promote efficiency in the deployment of observers, as downtime spent in transit or at port would not count as coverage for the purposes of compliance with minimum coverage levels.

One option for funding the ROP could be through a specific fund to which each Member contributes in proportion to the ‘vessel days’ fished by their flag vessels in previous fishing years. National observer programs could then be reimbursed from this fund for the total number of ‘sea days’ for which they provided international observers to the ROP in that year. This is a more stable funding formula than trying to recover actual costs within the same year and it creates an incentive for Members to contribute international observers to the ROP.

It should be noted that national observer programs can be assumed to already be spending a similar sum to that estimated above in order to obtain present coverage levels of 5% to 10%.

As this proposal would allow Members to use the ROP to meet their 10% observer coverage requirement instead of their own national program, it is feasible that the ROP could be implemented at low to negligible additional cost.

More detailed estimates of costs and options for the allocation of costs among Members should be explored and agreed early in the interim period.

Outstanding Issues

There are several outstanding issues that have not been discussed in detail in this proposal but which have been discussed and resolved in other RFMOs, notably the WCPFC. These are summarised below, with more detailed information in the hyperlinks and appendices. A working group should be established to progress these issues during the interim period.

Statistical stratification and allocation of observers

Early in the interim period, further work can be carried out to determine the most appropriate statistical stratification for the ROP.

The stratification and allocation of observer effort should be reviewed annually, considering whether the most recent data suggest that a different allocation of observer effort is warranted.

⁸ <http://www.iattc.org/PDFFiles2/MOP-21-09-RFMO-observer-program-comparison.pdf>

⁹ Estimated by multiplying a global volume of 15 000 tonnes by a wholesale price of US\$30 per kg

The actual allocation of observers in any fishing year should be determined during that year, considering the statistical stratification but also the prevailing dynamics and logistics of the fishery.

Standardised procedures for observer deployment

WCPFC has developed standardised procedures to be followed each time an observer is deployed on a fishing vessel. See paper [WCPFC/ROP-IWG3/2009-010](#)¹⁰.

Training standards for observers and observer trainers

These are detailed in the CCSBT Scientific Observer Program Standards (Appendix 1) and should be re-appraised for their ongoing validity under the CCSBT ROP.

Observer manuals, including equipment and vessel safety checklists, and workbooks

An observer manual that is specific to the needs of the CCSBT ROP but similar in form to that prepared for [CCAMLR's Program of International Scientific Observation](#)¹¹ could be developed. This would provide observers with a single point of reference for all relevant documentation. The manual should include an equipment and materials checklist, a vessel safety checklist, and identification guides for all species that may be encountered. Standardised forms should be available to observers in the most appropriate format, e.g. as workbooks. At the WCPFC 3rd Intersessional Working Group on the Regional Observer Program a *Vessel Safety Checklist* was approved; this is included here as Appendix 4.

Minimum standard of insurance for observers

Due to the inherent risks of commercial fishing operations it is important that international observers are adequately insured against personal injury and liability. For WCPFC this issue was discussed in an expert working paper entitled 'Fishery observer liability: points for consideration in agreements between fishing vessels and observer providers ([WCPFC/IWG-ROP2/2008-08](#))¹² with the recommendations listed in Appendix 5.

Rights and responsibilities of observers, vessel operators, captains and crew

It is important that observers, vessel operators, captains and crew understand their rights and responsibilities while an international observer is aboard a vessel fishing for SBT. These rights and responsibilities have been detailed for the WCPFC ROP (Appendix 6).

Accreditation of national observer programs

A key feature of the WCPFC ROP is the accreditation of existing national and sub-regional observer programs. The utility of this 'hybrid approach' could be explored for CCSBT.

Developing technologies for monitoring vessel operations and sampling catch

Use of electronic monitoring and reporting technologies should be explored during the interim period and if successful their use could be extended throughout SBT fisheries, and included in the CCSBT Strategic Plan.

¹⁰ www.wcpfc.int/system/files/documents/meetings/iwg-rop/3rd-intersessional-working-group/meeting-information/Standardised%20Procedures%20for%20Observer%20Deployment%202009-10.pdf

¹¹ www.ccamlr.org/pu/e/e_pubs/om/toc.htm

¹² www.wcpfc.int/system/files/documents/meetings/iwg-rop/2nd-intersessional-working-group/meeting-information/WCPFC-IWG-ROP2-2008-WP08.pdf

Performance measures for observer program

During the interim period and alongside existing reporting requirements concerning observer coverage, such as are detailed in the 2009 *Resolution on Compliance Action Plans* and the *Compliance Action Plan Template*, key performance measures for the CCSBT ROP should be determined, for inclusion in the CCSBT Strategic Plan.

Recommendations

The Extended Scientific Committee and Compliance Committee should consider the recommendations below and advise the Commission on implementation of an ROP:

1. CCSBT should agree to the development of a Regional Observer Program (ROP), to be implemented progressively over an interim period of not longer than 3 years.
2. Members should cooperate in leading the development and implementation of the ROP, with administrative assistance from the CCSBT Secretariat.
3. The ROP should be administered by the CCSBT Secretariat or alternatively by an appropriately experienced third party independent scientific observer provider.
4. The ROP should build on current national observer programs by facilitating the international exchange of national observers; these international observers could be augmented by independent observers from non-Members.
5. Depending on whether and how data from the national observer programs are exchanged among members, ROP observers could either be authorised to work on any vessel or only on vessels of a nationality different to their own.
6. The ROP should have a minimum level of coverage of 10% to address the immediate priority of SBT catch and effort verification.
7. During the interim period, national observer programs should continue to collect the data fields detailed in the CCSBT Scientific Observer Program Standards; as the ROP becomes operational a revised list of data fields may be collected, consistent with the standards of other RFMOs, particularly the WCPFC (Appendix 3).
8. The 'Rules and Procedures for the Protection, Access To, and Dissemination of Data compiled by the CCSBT' should govern management of ROP data, with default classification as 'Operational Level Catch and Effort Data' (High Risk), pending further discussion; it may be necessary to develop a specific category for observer data.
9. Members are encouraged to contribute observer data from their respective national observer programs to ROP databases, including historical data.

10. The results of ROP data analyses should be presented to the ERSWG, Scientific Committee and Compliance Committee, as appropriate. Summary statistics may be published on the CCSBT website and be part of national fishing season reports.
11. International observers should collect data on compliance with relevant Resolutions and Recommendations, including those of the WCPFC and IOTC when fishing in their Convention Areas; they should not otherwise act in an enforcement capacity.
12. An ROP Implementation Plan should be incorporated into the CCSBT Strategic Plan.
13. The Commission should determine a cost-effective funding formula for the ROP considering *inter alia* the number of vessel days fished by each Member, the use of equivalent monitoring systems, the degree of investment in other key research activities, the coverage levels of national observer programs and the extent to which observer data from these programs are made available to other Members.
14. Any outstanding issues should be resolved during the interim period, taking into consideration the operating standards applied in the ROPs of other RFMOs. The potential for collaboration with the ROPs of other RFMOs should be explored.

Appendix 1. The CCSBT Scientific Observer Program Standards

The CCSBT Scientific Observer Program Standards, which were developed over 2001–2003 and which apply to the national observer programs of Members, are not repeated here due to the length of the document, but they are available from the CCSBT website at this address:

http://www.ccsbt.org/docs/pdf/about_the_commission/observer_program_standards.pdf

Appendix 2. Conservation and Management Measure establishing the WCPFC Regional Observer Programme

¹³CONSERVATION AND MANAGEMENT MEASURE FOR THE REGIONAL OBSERVER PROGRAMME

Conservation and Management Measure 2007-01

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean;

Recalling Article 28(1) of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC Convention), which requires the Commission to develop a Regional Observer Programme to, among other things, collect verified catch data, and to monitor the implementation of the conservation and management measures adopted by the Commission;

Further recalling Article 28(7) of the WCPFC Convention, which requires the Commission to develop procedures and guidelines for the operation of the Regional Observer Programme;

Cognizant of Conservation and Management Measure 2006-07, which established the procedures to develop the WCPFC Regional Observer Programme;

Adopts, in accordance with Article 10 of the WCPFC Convention the following Conservation and Management Measure for the establishment of the WCPFC Regional Observer Programme (Commission ROP).

Establishment of the Commission ROP

1. There is hereby established the Commission ROP, which shall be coordinated by the Secretariat of the Commission.
2. The ROP shall be implemented on a phased basis. The implementation schedule is attached as Annex C.
3. The Secretariat of the Commission shall provide an annual report to the Commission with regard to the Commission ROP and on other matters relevant to the efficient operation of the programme.

Objectives of the Commission ROP

4. The objectives of the Commission ROP shall be to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures adopted by the Commission.

Scope of the Commission ROP

¹³ <http://www.wcpfc.int/system/files/documents/conservation-and-management-measures-and-resolutions/conservation-and-management-measures/CMM-2007-01%20%5BRegional%20Observer%20Programme%5D.pdf>

5. The Commission ROP shall apply to the following categories of fishing vessels authorized to fish in the Convention Area in accordance with the Commission's Conservation and Management Measures 2004-01:

- i) vessels fishing exclusively on the high seas in the Convention Area, and
- ii) vessels fishing on the high seas and in waters under the jurisdiction of one or more coastal States and vessels fishing in the waters under the national jurisdiction of two or more coastal States.

Functions of observers

6. The functions of observers operating under the Commission ROP shall include collecting catch data and other scientific data, monitoring the implementation of the conservation and management measures adopted by the Commission and any additional information related to the fishery that may be approved by the Commission. When a vessel is operating on the same fishing trip both in waters under the national jurisdiction of its flag State and in the adjacent high seas, an observer placed under the Commission ROP shall not undertake any of these functions in waters under national jurisdiction of the flag State without the consent of the flag State.

Obligations of CCMs of the Commission

7. Each CCM of the Commission shall ensure that fishing vessels fishing in the Convention Area, except for vessels that operate exclusively within waters under the national jurisdiction of the flag State, are prepared to accept an observer from the Commission ROP if required by the Commission.

8. Each CCM of the Commission shall be responsible for meeting the level of observer coverage as set by the Commission.

9. CCMs shall source observers for their vessels as determined by the Commission.

10. CCMs shall explain to the vessel captain, observer duties relevant to appropriate measures adopted by the Commission.

Role of the Commission and its subsidiary bodies

11. The Commission shall, through its subsidiary bodies within their respective mandates, monitor and supervise the implementation of the ROP, develop the priorities and objectives of the ROP, and assess the results of the ROP. The Commission may provide further direction concerning the operation of the ROP, as necessary. The Commission shall ensure the administration and coordination of the ROP is adequately resourced. The Commission may enter into contracts for the provision of the ROP.

Role of the Secretariat

12. Consistent with Article 15(4), the role of the Secretariat will be to:

- a) coordinate ROP activities, including, *inter alia*:

- i) maintaining the ROP Manual and the ROP Observer Workbook;
 - ii) so that existing national programmes and sub-regional programmes participating in the ROP maintain standards as adopted by the Commission;
 - iii) receiving communications and providing reports on the ROP's operation to the Commission (and its subsidiary bodies); including target and achieved coverage levels;
 - iv) coordinating ROP activities with other RFMOs as directed and appropriate;
 - v) facilitating the use of authorized observers in the ROP;
 - vi) monitoring observer trainers and observer training courses for ROP observers to promote the maintenance of standards adopted by the Commission;
 - vii) that the ROP addresses the data and monitoring requirements of the Commission's CMMs;
 - viii) that appropriate information and data for the monitoring of the implementation of CMMs as adopted by the Commission are collected, compiled, stored and disseminated by the ROP in accordance with procedures adopted by the Commission;
 - ix) managing and administering observers for special situations as directed by the Commission; and
 - x) support staff necessary to effectively administer the ROP.
- b) authorize observer providers to the ROP.

Role of coastal States

13. Each CCM shall nominate a WCPFC National Observer Coordinator, who shall be the contact point on matters related to the ROP.

Guiding principles for operation of the Commission ROP

14. The Commission ROP shall operate in accordance with the following principles:

- i) The Commission ROP shall consist of independent and impartial observers qualified in accordance with criteria approved by the Commission;
- ii) Vessels that operate principally in coastal waters, but occasionally venture on to the adjacent high seas or into the waters under the jurisdiction of a neighboring State, if they so agree, may carry observers of their own nationality provided those observers have been authorized by the Secretariat;
- iii) The Commission ROP shall be organized in a flexible manner that takes into account the nature of the fishery from the Convention Area and any other relevant factors the Commission may consider appropriate;

iv) To ensure cost effectiveness and to avoid duplication, the Commission's ROP shall be coordinated, to the maximum extent possible, with other regional, subregional and national observer programmes; and to this extent the Commission may enter into contracts or appropriate arrangements for the provision of the ROP.

v) The Commission ROP shall provide a sufficient level of coverage as approved by the Commission to ensure that the Commission receives appropriate data and information on catch levels and any additional information related to the fisheries within the Convention Area, taking into account the characteristics of the fisheries;

vi) Observers shall not unduly interfere with the lawful operations of the vessel and in carrying out their duties shall give due consideration to the operational requirements of the vessel and to the extent practicable minimize disruption to the operation of vessels fishing in the Convention Area; Observers shall comply with the Guidelines in Annex A — Guidelines for the Rights and Responsibilities of Observers.

vii) The Commission ROP shall be operated to ensure that observers shall not be unduly obstructed in the discharge of their duties. To this extent, CCMs of the Commission shall ensure that vessel operators comply with the Guidelines in **Annex B** — Guidelines for the Rights and Responsibilities of Vessel Operators, Captains and Crew.

viii) The Commission ROP shall ensure the security and confidentiality of nonaggregated data and other information which the Commission deems to be of a confidential nature; the release of data and other information collected by the Commission ROP shall be in accordance with guidelines set out in the Commission's Rules and Procedures for Access to, and Dissemination of, Data Compiled by the Commission.

¹ See TCC2 Summary Report, para 54ii: “the need to integrate existing national and regional observer programmes into the Commission programme and “to allow CCMs to continue to deploy national observers on vessels that principally operate in coastal waters and that occasionally extend their fishing operations on to the high seas.”

Appendix 3. Minimum data standards to be collected under the WCPFC Regional Observer Programme

General vessel and trip information for all vessel types

VESSEL IDENTIFICATION

Name of vessel
 Vessel flag
 Flag State Registration Number
 International Radio Call Sign
 Vessel Owner/Company

TRIP INFORMATION

Date and time of departure from port
 Port of departure
 Date and time of return to port
 Port of return

OBSERVER INFORMATION

Observer name
 Passport - nationality of observer
 Observer provider -country or organisation
 Observer's ROP certification number
 Date, time and location of embarkation
 Date, time and location of disembarkation

CREW INFORMATION

Name of captain
 Passport nationality of captain
 Name of fishing master
 Passport nationality of fishing master
 Other crew
 Passport nationality of crew
 Total number of Crew

VESSEL ATTRIBUTES

Vessel cruising speed
 Vessel fish hold capacity

VESSEL ELECTRONICS

Radars
 Depth sounder
 Global positioning system (GPS)
 Track plotter
 Weather facsimile
 Sea surface temperature (SST) gauge
 Sonar
 Radio/ Satellite buoys
 Doppler current meter
 Expendable bathythermograph (XBT)
 Satellite communications services (Phone/Fax/Email numbers)

Fishery information services
Vessel monitoring system

Total amount of baskets, floats monitored by
observer in a single set

Longline

VESSEL ATTRIBUTES

Refrigeration Method

GENERAL GEAR ATTRIBUTES

Mainline material

Mainline length

Mainline diameter

Branch line material(s)

SPECIAL GEAR ATTRIBUTES

Wire trace

Mainline hauler

Branch line hauler

Line shooter

Line shooter speed

Automatic bait thrower

Automatic branch line attached

Hook type

Hook size

Tori pole

Bird curtain

Weighted branch lines

Blue dyed bait

Underwater setting shoot

Disposal method for offal management

SET AND HAUL INFORMATION

Date and time of start of set

Latitude and longitude of start of set

Date and Time of end of set

Latitude and longitude of end of set

Total number of baskets or floats

Number of hooks per basket, or

number of hooks between floats

Total number of hooks used in a set

Length of float-line

Distance between branch-lines

Length of branch-lines

Time-depth recorders (TDRs)

Number of light-sticks

Target species

Bait species

Date and time of start of haul

Date and time of end of haul

INFORMATION ON CATCH FOR EACH SET

Hook number between floats
 Species code
 Length of fish
 Length measurement code
 Gender
 Condition when caught
 Fate
 Condition when discarded
 Tag recovery information

Purse seine**VESSEL AND RELATED ATTRIBUTES**

Number of onboard support vessels
 Helicopter Make/Model,/Colour/Call sign/Registration

GEAR ATTRIBUTES

Maximum depth of net
 Maximum length of net
 Net mesh size
 Brailer capacity sizes

INFORMATION ON DAILY ACTIVITIES

Date and time of start of daily activities
 Time of activity
 Latitude and longitude of activity
 Numbers of school sighted per day

SCHOOL INFORMATION

Method of detection of school
 Type of school association

SET INFORMATION

Observer's record of date and time of start of set
 Observers record of date and time of end of set
 Vessel's record of date and time of start of set
 Retained catch, by species
 Discards, by species
 Tag recovery information

INFORMATION ON CATCH FOR EACH SET

Species code
 Length measurement code
 Length

Appendix 4. Vessel safety checklist under the WCPFC Regional Observer Program

WESTERN CENTRAL PACIFIC FISHERIES COMMISSION
 REGIONAL OBSERVER PROGRAMME
 VESSEL SAFETY CHECK GUIDELINES
 ROP-IWG3 21/03/09 VESSEL INFORMATION

TYPE OF VESSEL	PS	LL	P&L	OTHER
NAME OF VESSEL			Vessel Size (Length	
FLAG STATE			< 16 metres	
			16-25 metres	
			26 -39 metres	
			40-65 metres	
			> 65 metres	

CALL SIGN OR WCPFCWIN NUMBER

FLAG STATE

REGISTRATION NUMBER

OWNER/OPERATOR

MASTER /CAPTAIN

VESSEL SAFETY CHECK (VSC)

ESSENTIAL ITEMS TO BE CHECKED	YES	NO	N/A	COMMENTS
-------------------------------	-----	----	-----	----------

1. VESSEL SURVEY DOCUMENTATION (CURRENT)
2. CORRECT SIZE PERSONAL FLOATATION DEVICES AVAILABLE
3. APPROVED LIFE RAFT OR LIFE BOATS UNDER CURRENT SURVEY AND ADEQUATE FOR NUMBER OF CREW
4. EPIRBS (CURRENT SURVEY)
5. DISTRESS SIGNALS AND FLARES
6. FIRE FIGHTING EQUIPMENT IN GOOD ORDER
7. FIRE EXTINGUISHERS (CURRENT CHECKED)
8. MARINE RADIO HF SSB OR SUBSTITUTE COMMUNICATIONS
9. NAVIGATION LIGHTS / VESSEL LIGHTS (WORKING ORDER)
10. SOUND PRODUCING DEVICES OR BELL

ADDITIONAL ITEMS TO BE CHECKED

11. REGISTRATION DOCUMENTATION IN ORDER
12. OTHER WORK RELATED VESSELS ON BOARD THAT COULD BE UTILISED IN CASE OF EMERGENCY
13. NAUTICAL CHARTS AND NAVIGATION AIDS (GPS/RADAR)
14. FIRST AID EQUIPMENT
15. SANITATION
16. PHONE
17. EMAIL/FAX
18. INSURANCE FOR OBSERVER WHILST ON BOARD
19. VESSEL INSURANCE
20. ROOM FOR CREW AND OBSERVER TO WORK SAFELY

VESSEL AT THE TIME OF CHECKING IS CONSIDERED TO BE NOT SUITABLE FOR AN OBSERVER BOARDING

VESSEL AT THE TIME OF CHECKING MEETS THE REQUIREMENTS FOR AN OBSERVER BOARDING

NAME OF CHECKER _____ POSITION _____

SIGNED _____ DATE _____

EXPLANATION ON VSC REQUIREMENTS

The fields in this form are to be used as a guide when developing a Vessel Safety Checklist (VSC) for National Observer Programmes. If a National programme has a VSC in place then that should be used, however the fields in this form may be used to check safety, on whether an observer is safe to board the vessel.

1. **VESSEL SURVEY DOCUMENTATION CURRENT** Fishing Vessels and support vessels operating in the WCPFC must comply with their Flag State regulations and/or the Code of Practice for Safety. Ship surveys including condition, safety and security aspects of hull, machinery and on board safety equipment must be available to be viewed
2. **CORRECT SIZE PERSONAL FLOATATION DEVICE AVAILABLE** Life Jackets must be approved types and in good serviceable condition, Life Jackets of suitable sizes must be readily accessible for the observer and all crew. Life jackets will not be stored away or locked in cupboards or rooms.
3. **APPROVED LIFE** -Life rafts must be currently in survey and be adequate to carry the amount of crew including the observer on board the vessel.
4. **EPIRBs** International Standard 406 MHz EPIRB. The signal frequency (406 MHz) has been designated internationally for use only for distress. Check to see the frequency number and position of these EPIRBs, a few vessels may have the older relatively common type of 121.5/243 MHz emergency beacons, these became obsolete in late 2008
5. **DISTRESS SIGNAL AND FLARES.** Vessels should have on board appropriate pyrotechnics devices that will suitably operate in both day and night emergency situations
6. **FIRE FIGHTING EQUIPMENT** Fire fighting must be readily available, be able to work and be currently serviceable. Note that some small vessels may only have fire extinguishers on board.
7. **MOUNTED FIRE EXTINGUISHER,** Fire extinguishers must be readily available and be of the correct type. Portable extinguishers require periodic maintenance therefore the last inspection date when last tested or refilled should be available. All must be currently serviceable and if possible should be checked to ensure extinguishes have not been fully or partially discharged.
8. **MARINE RADIO HF SSB(WORKING ORDER)** Marine SSB (Single Side Band) is a means of communications for many fishing vessels. The radio must be capable of transmitting and receiving frequencies used for emergency marine communications as agreed by the International Telecommunication Union (ITU) or by the Flag State of the vessel.
9. **NAVIGATION LIGHTS AND VESSEL LIGHTS** Vessels must be able to display international standard navigation lights between sunset and sunrise and in conditions of reduced visibility. Internal and external vessel lighting must be fully operational. In the case of power failure, battery operated safety lights must be appropriately placed to ensure a safe exit from the vessel
10. **SOUND PRODUCING SIGNALS OR BELLS** Vessels must carry a sound producing device (whistle, horn, siren or bell) capable of a prolonged blast or ringing for distress signaling purposes.
11. **REGISTRATION DOCUMENTATION IN ORDER** Flag State Registration documentation papers must be on board and available to be viewed and must show registration number, boats name, country and port of registration.
12. **OTHER WORK RELATED VESSELS** Many vessels have auxiliary vessels that can be used in emergency situations. Note these.
13. **.NAUTICAL CHARTS AND NAVIGATION AIDS** Vessel must have a set of appropriate, up to date nautical charts. Check to ensure that the Radar, GPS and any other navigational equipment is in good order and functioning.
14. **FIRST AID EQUIPMENT** The vessel must have adequate first aid facilities with current "use by dates" on all apparatus, drugs, dressings and other first aid paraphernalia.
15. **SANITATION** The vessel should have clean, well maintained sanitation and bathing facilities. Depending on the size of the vessel, observers may experience a lack of these facilities on board.
16. **PHONE** if the vessel has a satellite phone note the number for future reference.
17. **EMAIL/FAX** If the vessel has Fax or Email system note the numbers for future reference or emergencies.
18. **INSURANCE FOR OBSERVERS ON BOARD** - Observers must be covered by insurance before making a boarding
19. **VESSEL INSURANCE** – Check if vessel has insurance
20. **ROOM FOR OBSERVER AND CREW TO WORK SAFELY** , There must be adequate room on board the deck for the Observer and Crew to work in such a manner, so as to not hinder each other in their respective work duties.

Appendix 5. Minimum standard of insurance for observers under the WCPFC Regional Observer Program

Mandatory/Required Terms:

Observer Provider must provide evidence:

- That Observers are professionally qualified for the intended task
- That Observers are physically capable to carry out the intended task
- That Observers are to be compensated directly for their work by the Provider
- That Observers have been fully briefed for the intended task
- To whom the Observers are responsible and report to
- What national laws may be applicable of affect observer liability

Fishing Vessel/Operator/Charterer must provide evidence:

- That the fishing vessel/operator/company/charterer has a valid 'Certificate of Entry' issued by a P&I club, which is a member of the International Group of P&I Clubs
- That the P&I policy covers "other persons" on board, such as Fisheries Observers for all liabilities normally covered under such a policy
- That full details of such P&I coverage will be disclosed to the Observer Provider
- That the relevant P&I club has been informed that fisheries observers will be carried on board and has agreed to such carriage
- That the P&I policy will be in effect throughout the period the Observers are on board
- That the Observers carried on board will be provided with a safe environment commensurate with the expected fisheries operations
- What national/flag state laws may be applicable and affect observer liability

Negotiable Terms:

- The Observer Provider assumes full health and safety insurance responsibilities for its observers on terms and costs to be disclosed
- The Observer Provider assumes partial health and safety insurance for its observers to complement any existing P&I policy. Terms and costs to be disclosed
- The Observer Provider assumes full/ partial/no disciplinary responsibility for its observers. This would include accepting responsibilities for claims arising from disciplinary breaches.
- The Observer Provider assumes responsibility for any claims that might arise whilst its observers are in transit to and from the fishing vessel.
- The Fishing Vessel assumes full responsibility for any Fisheries Observer Liability under the P&I Policy. Terms and costs to be disclosed.
- The Fishing Vessel absorbs any additional P&I costs involved in the carriage of Observers on board, or whilst in transit to and from the vessel. Terms and costs to be disclosed.
- The Fishing Vessel agrees that the Observers will be/will be partially/will not be subject to the ship's disciplinary regulations. Costs and terms to be disclosed.

The above list is not exhaustive and will depend to a significant extent on the overall access negotiations between the Fisheries Commission, Coastal or Island state and the access/licensing applicant.

Appendix 6. Rights and Responsibilities of Vessel Operators, Captains and Crew, and of Observers, under the WCPFC Regional Observer Program

The rights of vessel operators and captains shall include:

- a) Expectation that a reasonable period of prior notice of the placement of an ROP observer shall be given.
- b) Expectation that the observer will comply with the general rules of behavior, hierarchy, and laws and regulations of the CCM of the Commission that exercises jurisdiction over the vessel.
- c) Timely notification from the observer provider on completion of the observer's trip of any comments regarding the vessel operations. The captain shall have the opportunity to review and comment on the observer's report, and shall have the right to include additional information deemed relevant or a personal statement.
- d) Ability to conduct lawful operations of the vessel without undue interference due to the observer's presence and performance of necessary duties.
- e) Ability to assign, at his or her discretion, a vessel crew member to accompany the observer when the observer is carrying out duties in hazardous areas.

2. The responsibilities of vessel operators and captains shall include:

- a) Accepting onboard the vessel any person identified as an observer under the ROP when required by the Commission.
- b) Informing the crew of the timing of the ROP observer boarding as well as their rights and responsibilities when an ROP observer boards the vessel.
- c) Assisting the ROP observer to safely embark and disembark the vessel at an agreed upon place and time.
- d) Giving notice to the ROP observer at least fifteen (15) minutes before the start of a set or haul onboard, unless the observer specifically requests not to be notified.
- e) Allow and assist the ROP observer to carry out all duties safely.
- f) Allowing ROP observer full access to the vessel's records including vessel logs and documentation for the purpose of records inspection and copying.
- g) Allowing reasonable access to navigational equipment, charts and radios, and reasonable access to other information relating to fishing.
- h) Permitting access to additional equipment, if present, to facilitate the work of the ROP observer while onboard the vessel, such as high powered binoculars, electronic means of communication, etc.
- i) Allow and assist the ROP observer to remove and store samples from the catch.
- j) The provision to the ROP observer, while onboard the vessel, at no expense to the observer or the ROP observer's provider or government, with food, accommodation, adequate sanitary amenities, and medical facilities of a reasonable standard equivalent to those normally available to an officer onboard the vessel.
- k) The provision to the ROP observer, while onboard the vessel, insurance coverage for the duration of the observer's time onboard the vessel.

j) Allow and assist full access to and use of all facilities and equipment of the vessel that the observer may determine is necessary to carry out his or her duties, including full access to the bridge, fish onboard, and areas which may be used to hold, process, weigh, and store fish.

m) Ensuring the ROP observer is not assaulted, obstructed, resisted, delayed, intimidated, interfered with, influenced, bribed or is attempted to be bribed in the performance of their duties.

The rights of vessel crew shall include:

a) Expectation that the ROP observer will comply with the general rules of behavior, hierarchy, and laws and regulations of the CCM that exercises jurisdiction over the vessel.

b) Expectation that a reasonable period of prior notice of the placement of a ROP observer shall be given by the Captain.

c) Reasonable expectation of privacy in crew personal areas.

d) Ability to carry out duties associated with normal fishing operations without undue interference due to the ROP observer's presence and performance of their necessary duties.

The responsibilities of the vessel crew shall include:

a) Not assaulting, obstructing, resisting, intimidating, influencing, or interfering with the ROP observer or impeding or delaying observer duties.

b) Compliance with regulations and procedures established under the Convention and other guidelines, regulations, or conditions established by the CCM that exercises jurisdiction over the vessel.

c) Allowing and assisting full access to and use of all facilities and equipment of the vessel which the observer may determine is necessary to carry out his or her duties, including full access to the bridge, fish onboard, and areas that may be used to hold, process, weigh, and store fish.

d) Allow and assist the ROP observer to carry out all duties safely.

e) Allow and assist the ROP observer to remove and store samples from the catch.

f) Compliance with directions given by the vessel captain with respect to the ROP observers duties.

The rights of observers shall include:

a) Full access to and use of all facilities and equipment of the vessel which the observer may determine is necessary to carry out his or her duties, including full access to the bridge, fish on board, and areas which may be used to hold, process, weigh, and store fish.

b) Full access to the vessel's records including its logs and documentation for the purpose of records inspection and copying, reasonable access to navigational equipment, charts and radios, and reasonable access to other information relating to fishing.

c) Access to and use of communications equipment and personnel, upon request, for entry, transmission, and receipt of work related data or information.

d) Access to additional equipment, if present, to facilitate the work of the observer while on board the vessel, such as high powered binoculars, electronic means of communication, etc.

e) Access to the working deck during net or line retrieval and to specimens (alive or dead) in order to collect and remove samples.

f) Notice by the vessel captain of at least fifteen (15) minutes before hauling or setting procedures, unless the observer specifically requests not to be notified.

- g) Access to food, accommodations, medical facilities, and sanitary facilities of a reasonable standard equivalent to those normally available to an officer on board the vessel.
- h) The provision of adequate space on the bridge or other designated area for clerical work and adequate space on the deck for observer duties.
- i) Freedom to carry out their duties without being assaulted, obstructed, resisted, delayed, intimidated or interfered with in the performance of their duties.

The responsibilities of observers shall include:

- a) Being capable of performing the duties set out by the Commission.
- b) Acceptance and compliance with agreed upon confidentiality rules and procedures with respect to the fishing operations of the vessels and of the vessel owners.
- c) Maintenance of independence and impartiality at all times while on duty in the ROP.
- d) Compliance with the ROP protocols for observers carrying out ROP duties on board a vessel.
- e) Compliance with the laws and regulations of the CCM that exercises jurisdiction over the vessel.
- f) Respecting the hierarchy and general rules of behavior that apply to all vessel personnel.
- g) Performance of duties in a manner that does not unduly interfere with the lawful operations of the vessel and in carrying out their functions they shall give due consideration to the operational requirements of the vessel and shall communicate regularly with the captain or master of the vessel.
- h) Familiarity with the emergency procedures aboard the vessel, including the locations of life rafts, fire extinguishers, and first aid kits.
- i) Communicating regularly with the vessel captain on relevant observer issues and duties.
- j) Observance of ethnic traditions of the crew and customs of the flag State of the vessel.
- k) Adherence to the ROP Code of Conduct for observers.
- l) Promptly writing and submitting reports to the Commission or national programme in accordance with procedures adopted by the Commission

Attachment B

Australia's draft resolutions:

Resolution on the Verification of Catch and Effort Data through the use of Observers

The Extended Commission for the Conservation of Southern Bluefin Tuna (CCSBT),

Recognising the ongoing need for all Members and Cooperating Non-Members to continue to improve the accuracy and validity of their catch and effort data;

Recalling that, at its sixteenth annual meeting, the Extended Commission Members and Cooperating Non-Members agreed to measures to systematically verify catch data of southern bluefin tuna and ecologically related species by fishers (the *Resolution on action plans to ensure compliance with Conservation and Management Measures*);

Mindful of the 2008 Report of the Performance Review Working Group, which highlighted the development of effective measures relating to a regional observer program as an area in which CCSBT could improve its performance;

Acknowledging the recommendations of the 2010 Joint Tuna RFMO 'International Workshop on Improvement, Harmonization and Compatibility of Monitoring, Control and Surveillance measures, including monitoring catches from catching vessels to markets' on observers;

Recalling that, at its seventh annual meeting, Commission Members and Cooperating Non-Members adopted the CCSBT Scientific Observer Program Standards, including a target observer coverage of 10% catch and effort monitoring;

Agrees, in accordance with paragraph 3(b) of Article 8 of the CCSBT Convention, that:

Observer coverage

1. By 1 January 2012, Members and Cooperating Non-Members shall implement a minimum observer coverage of 5% of the catch and effort taken in the exclusive economic or fishery zones through which southern bluefin tuna migrates, with a target observer coverage of 10%.
2. Each Member and Cooperating Non-Member of the Extended Commission shall be responsible for meeting the level of observer coverage as set by the Extended Commission.

Functions of observers

3. The functions of observers operating under this Resolution shall include:
 - a) collecting catch and effort data and other scientific data;
 - b) collecting data in relation to ecologically related species;
 - c) verifying the position of the vessel;
 - d) monitoring the implementation of measures adopted by the Extended Commission,
 - i. including mandatory deployment of tori lines on longline vessels south of 30°S;
 - e) collecting data as specified in any template agreed by the Extended Commission;

- f) collecting any other information as determined by the Extended Commission.
4. The Extended Commission shall develop a template for the collection of observer data for implementation by 1 January 2013.

Exchange of observers

5. No later than 1 January 2012, Members and Cooperating Non-Members shall cooperate in the exchange of observers on a regular basis from their national observer programs.
6. Members and Cooperating Non-Members shall report on exchange of observers to the Extended Commission on an annual basis.

Observer data to be submitted to the Secretariat

7. At least 60 days before the meeting of the Extended Scientific Committee or unless otherwise agreed through the Data Exchange, Members and Cooperating Non-Members shall submit to the Secretariat all observer data as collected under paragraph 3.
8. Data collected in accordance with this Resolution shall be considered Extended Commission data.

Secretariat to make observer data available

9. From 1 January 2013, data submitted to the Secretariat in accordance with this Resolution shall be made available to the Extended Scientific Committee and Compliance Committee and in accordance with the *CCSBT rules and procedures for the protection, access to, and dissemination of data*.

Review of observer data

10. At the 2013 sessions of the Extended Scientific Committee and Compliance Committee, the data generated by the observer requirements established under this Resolution shall be reviewed and those subsidiary bodies shall make appropriate recommendations to the Extended Commission on further improvements to the observer requirements establish under this Resolution.

General principles and obligations of observers

11. Observers operating under this Resolution shall be independent and impartial and qualified in accordance with any future criteria determined by the Extended Commission.
12. Observers shall not unduly interfere with the lawful operations of the vessel and in carrying out their duties shall give due consideration to the operational requirements of the vessel and to the extent practicable minimise disruption to the operation of vessels fishing under the Convention.

Resolution on Real-Time Monitoring on Large-Scale Longline Vessels

The Extended Commission for the Conservation of Southern Bluefin Tuna (CCSBT),

Recognising the ongoing need for all Members and Cooperating Non-Members to continue to improve the accuracy and validity of their catch and effort data,

Agrees, in accordance with paragraph 3(b) of Article 8 of the CCSBT Convention, that:

1. After 1 January 2013, all tuna longline vessels with freezer capacity (hereafter referred to as “LSTLVs”), shall use real-time monitoring equipment while operating in the exclusive economic or fishery zones through which southern bluefin tuna migrates.
2. Members and Cooperating Non-Members shall require their LSTLVs to report daily to the Member or Cooperating Non-Member with the following information:
 - a) Name and vessel call sign of the vessel;
 - b) Date of catch;
 - c) Vessel’s position (latitude and longitude) at the start and end of each set;
 - d) Number of hooks used;
 - e) Time at start and end of gear set;
 - f) Time at state and end of gear retrieval;
 - g) Length, weight, product type and tag number of the individual southern bluefin tuna retained on the vessel; and
 - h) Number of southern bluefin tuna released or discarded.