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**SCIENTIFIC DATA AVAILABLE TO THE
WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION**

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Peter Williams¹

¹ Oceanic Fisheries Programme (OFP), Secretariat of the Pacific Community (SPC), Noumea, New Caledonia.

ABSTRACT

This paper reports on the major developments over the past year with regard to filling gaps in the provision of scientific data to the Commission.

All CCMs with fleets active in the WCPFC Convention Area provided 2013 annual catch estimates before the deadline. Estimates for the key shark species (which is in accordance with the change in the requirements to include the key shark species catches) continue to improve and the implementation of the new extended longline logsheets (which has the provision for reporting shark at the species level) is gradually progressing.

In general, the timeliness of the provision of aggregate catch/effort data continues to improve with nearly all CCMs providing data by the deadline of 30th April 2014. The quality of aggregate data provided has also improved with a reduction in the number of notes assigned to the aggregate data in recent years.

Aggregate data for the Japanese Coastal longline fleet (1994-2013) and operational data from the Vietnam longline fleet (2012-2013) were made available for the first time. Annual catch estimates by EEZ and high seas areas were provided by Japan (2008-2013) and Chinese Taipei (2011-2013) for the first time. Japan also provided vessel numbers in their aggregate data (2008-2013) covering their longline (distant-water), pole-and-line and purse seine fleets for the first time.

The main data gaps listed in the paper are:

- The non-submission of Annual Catch Estimates by EEZ/high seas for two key fleets (Section 2.4);
- The non-submission of OPERATIONAL data for several key fleets (Section 2.5);
- The non-submission of number of vessels in the aggregate data for two key fleets (Section 2.7);
- The need for improvement in the submission of catch estimates for the key shark species and reporting of discard estimates;

The Western Pacific East Asia Oceanic Fisheries Management Project (WPEA OFM) which provides support to the Philippines, Indonesia and Vietnam with respect to establishing tuna fishery data collection and management systems has now terminated, but a new 3-4 year project will commence in late 2014. There remains significant work to improve the coverage and quality of logsheet, port sampling and observer data, and the reliability of annual catch estimates for certain gears. For Indonesia, the main data gaps continue to be the lack of aggregate catch/effort data and the uncertainty of the estimates for their small-scale tuna fisheries. For the Philippines, the main data gap is the reliability of the historical estimates for their small-scale artisanal hook-and-line fisheries. For Vietnam, the main data gap is the complete lack of historical annual catch estimates prior to 2000, and the need to improve the coverage of logbook data.

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1. INTRODUCTION

1. The obligations for provision of scientific data to the Commission are set out in the Scientific Committee (SC) documentation “*Scientific Data to be Provided to the Commission*” and “*Standards for the Provision of Operational Catch and Effort Data to the Commission*” (Anon. 2005a, Annex VII) which were adopted by the Western and Central Pacific Fisheries Commission (WCPFC) at its second session in December 2005 (Anon. 2005b, par. 25). The “*Standards for the Provision of Operational Catch and Effort Data to the Commission*” were incorporated as ANNEX 1 of “*Scientific Data to be Provided to the Commission*” which was further refined and subsequently adopted at the Fourth Regular Session of the Commission, Tumon, Guam, USA, 2-7 December 2007 (Anon, 2007). The most recent revisions (covering the inclusion of catch estimates of key shark species and specifying the size class intervals for size data) were adopted at the Seventh Regular Session of the Commission (WCPFC7), Honolulu, Hawaii, 6–10 December 2011 (Anon. 2011), and the Ninth Regular Session of the Commission (WCPFC9), Manila, Philippines, Hawaii, 6–10 December 2012 (Anon. 2012), respectively, and can be found at <http://www.wcpfc.int/guidelines-procedures-and-regulations>, or more specifically at <http://www.wcpfc.int/doc/data-01/scientific-data-be-provided-commission-revised-wcpfc4-6-7-and-9>.

2. As specified in the recommendations for the provision of data, the SPC Oceanic Fisheries Programme (OFP), which has been engaged by the Commission to provide scientific services (including the collection, compilation and dissemination of fisheries data) under Article 13 of the Convention, has compiled annual catch estimates, operational (logsheets or logbooks) catch and effort data, aggregated catch and effort data, and size composition data on behalf of the Commission. In conducting scientific research and analyses in support of the work of the Commission, the OFP has also compiled other types of data, such as reports of unloadings, observer data, port sampling data, tagging data, oceanographic data and various types of biological data.

3. While the catch, effort and size composition data currently available are extensive, there are important gaps. The purpose of this paper is to review recent developments concerning the compilation of data by the OFP, on behalf of the Commission, particularly in regard to these important data gaps, and to present information on the coverage of scientific data held by the WCPFC.

4. A system to review the provisions of scientific data to the WCPFC and highlight data gaps on the Commission’s web site was initially developed prior to SC4 (refer to <http://www.wcpfc.int/status-data-provision>). This system serves to provide the following functions:

- Provide the WCPFC Secretariat, the Scientific Committee and data managers with a broad indication of the status of data collected and provided to the WCPFC (i.e. identify data gaps);
- Provide Commission members and co-operating non-members (CCMs) with a concise summary of what data have/have not been provided to the WCPFC, and any deficiencies with the data provided;
- Serve as a reference for WCPFC Secretariat and data managers when following up with CCMs on any outstanding issues with respect to the collection/provision of data to the WCPFC (identify data gaps which may prompt 'data rescues', for example);
- Provide the users (e.g. researchers) with a concise summary of what data are available and inform them of any problems that are apparent in data provided.

5. CCMs have been encouraged to use this tool to ensure their data provisions have been registered with the Commission and review where data provisions are outstanding.

6. The WCPFC Data Catalogue has been updated on the WCPFC web site (<http://www.wcpfc.int/wcpfc-data-catalogue-0>) to cover the 2012 data provisions. This facility provides a description of the WCPFC data holdings by gear, species and data type (annual catch estimates, aggregate catch and effort data, operational catch/effort data and aggregated size data). The WCPFC Data Catalogue will continue to be enhanced in the coming years, as required. An indication of the coverage of aggregate catch and effort data, operational logsheets (catch and effort) data, unloadings data, port sampling data and observer data held by the OFP can also be viewed at <http://www.spc.int/oceanfish/en/ofpsection/data-management/wcpfc/213/146-wcpo-tuna-fishery-data-coverage>. It is expected that the data coverage facility will be enhanced and transferred to the Commission’s web site at some stage in the future.

2. STATUS OF DATA GAPS

7. Data gaps and other issues related to the provision of data have been reported at SC1 (Williams and Lawson, 2005), SC2 (OFP, 2006), SC3 (OFP, 2007), SC4 (OFP, 2008), SC5 (OFP, 2009), SC6 (Williams, 2010), SC7 (Williams, 2011), SC8 (Williams, 2012) and SC9 (Williams, 2013).

8. The following sections describe the most important current gaps in the WCPFC scientific data holdings. These sections are carried over from previous versions of this paper until the data gap issue is considered to be resolved. The text in *blue italics* reflects the recent work and/or developments to resolve the respective data gaps.

2.1 Major data gaps for key fleets

2.1.1 Philippines tuna fishery data

9. During the past year, the WCPFC Secretariat and the SPC/OFP continued to work with their Philippine counterparts to improve the data available from the Philippines domestic fisheries. The UNDP/GEF-funded West Pacific East Asia Oceanic Fisheries Management (WPEA²) project, which is supporting this work, terminated in 2012, but additional bridging funds allowed work to continue during 2013 and the second WPEA project has now been approved and will commence in late 2014. Significant progress has been made over the past 4 years with several important data gaps resolved.

10. Significant developments in resolving data gaps in the Philippines' domestic fisheries over the past year include:

- *The seventh Philippines Annual Catch Estimates Review Workshop (Anon, 2014a) was convened and attended by important stakeholders with knowledge and information on the tuna fisheries in the Philippines (government, industry and NGOs). Further progress was made this year on producing more reliable estimates for the municipal hook-and-line fishery, with the Philippines government committing funds to increase the monitoring of landings from this fishery in all provinces.*
- *The collection of operational logsheet data from the domestic purse seine fishery continues to progress with comprehensive data now available for 2008-2013.*
- *The coverage of logbook and observer data provided for the component of the Philippines domestic purse seine fleet fishing in the High Seas Pocket #1 was 100% for 2013 activities.*
- *The Philippines national observer programme continues to collect important data from the domestic purse seine fishery and the fishery active in the high seas pocket, the latter of which are classified as ROP data. These data will provide fundamental information on the fishery which feed into the annual catch estimates and stock assessment processes in the future.*
- *The Philippines have started trials with an e-logbook system for their purse seine fishery and expect to progress to full implementation for the HSP fleet in the coming years.*

11. The most important data gaps for Philippines remain:

- i. Improving logsheet coverage for the purse seine vessels fishing in the Philippines EEZ;
- ii. More reliable estimates for the small-scale municipal gears;
- iii. Provision of estimates and data for the distant-water Philippine longline vessels.

2.1.2 Indonesian tuna fishery data

12. Prior to the WPEA project, the absence of a breakdown of annual catch estimates by gear type, the lack of operational logsheet and size data for the Indonesian domestic fisheries were amongst the most significant gaps in the provision of data to the WCPFC.

² Refer to <http://www.wcpfc.int/doc/2009/wpea-ofm-project-document>; significant co-financing is included with this project in supporting the work in Indonesia, Philippines and Vietnam

13. During the past year, with the assistance provided through the WPEA project, the WCPFC Secretariat and the SPC/OFP continued to work with their Indonesian counterparts to improve the data available from these fisheries. Significant developments in the past year include:

- *The fifth Indonesia/WCPFC Area Annual Catch Estimates Review Workshop (Anon, 2014b) was conducted in Bogor, Indonesia in June 2013. Participants included the Directorate General of Capture Fisheries and the Research Center for Capture Fisheries and Marine Resources. 2013 catch estimates by SPECIES and GEAR were compiled for the EEZ and archipelagic waters and historical estimates by GEAR and SPECIES were reviewed and refined going back as far as 1978 for longline, and 1980 for the other gears.*
- *In the past, a combined small-scale artisanal catch estimate (covering troll, small-fish hook-and-line and the gillnet fisheries) was only possible, but this workshop produced separate 2013 catch estimates for these gears for the first time.*
- *The Indonesian government has committed funds to increase the monitoring of landing sites which will improve the information used to determine catch estimates in the future.*
- *The workshop noted the increase in the provision of logbook data although these data have yet to be compiled and provided to the WCPFC.*

14. The most important data gaps for Indonesia remain:

- i. The need for a detailed review of the sources of catch for several key gear types (longline, handline and pole-and-line) would help explain the level of catch;
- ii. The need for a review to breakdown the combined small-scale artisanal catch estimates by gear type, and validate their reliability, for years prior to 2013;
- iii. Compilation and submission of aggregate and operational catch/effort data for recent years since the logbooks became mandatory in the Indonesian domestic tuna fisheries (2011-2013).

2.1.3 Vietnamese tuna fishery data

15. Prior to the WPEA project, there were no annual catch estimates, operational nor aggregated catch and effort data, nor size composition data available, other than anecdotal information on catches (e.g. Lewis, 2005).

16. During the past year the WCPFC Secretariat and the SPC/OFP continued to work with their Vietnamese counterparts to improve the data available from these fisheries. Significant developments in the past year, include:

- *The third Vietnam Tuna Fisheries Annual Catch Estimates Workshop (Anon, 2014c) was convened and attended by important stakeholders with knowledge and information on the tuna fisheries in Vietnam, in June 2014. This workshop included an in-depth review of recent developments in the Vietnam tuna fisheries and the production of 2013 annual catch estimates by GEAR and SPECIES (with the inclusion of tuna catch estimates compiled from the non-WPEA provinces). The workshop specifically reviewed the gillnet fishery data and provided recommendations for improved data collection including the additional of more species on the forms.*
- *The annual catch estimates for Vietnam and the available logbook data for the longline fishery were used to generate aggregate data by time and area which were added to the WCPFC aggregate databases.*

17. The most important data gaps for Vietnam remain:

- i. the construction of historical annual catch estimates for each of the domestic Vietnamese fisheries prior to 2000;
- ii. the compilation and provision of aggregate and operational catch/effort data from the longline fishery from logbooks collected since 2011;
- iii. the establishment of logbook data collection for the purse seine and gillnet fisheries.

2.1.4 Other fleets

18. Gaps in the provision of historical data for key fleets have been noted in previous papers. In several cases, no specific fishery data were collected during the period mentioned, so data cannot be provided to the WCPFC. However, there may be other information available to construct an historical time series through specific studies. In the past, the following were noted to be the data gaps that could be resolved.

- There are no operational (logsheet), aggregated catch and effort, nor size data available for years prior to 2004 for the **Chinese-Taipei domestic offshore longline (STLL)** fleet;
- There are no operational or aggregated catch and effort data, nor size composition data, available for the **Japanese Coastal fleet**;
- There are no operational or aggregated catch and effort data, nor size composition data, available for the period prior to 1972 for the **Japanese pole-and-line fleet**.

19. Developments during the past year include:

- *Aggregate catch effort data covering years 1994-2013 were provided for the Japanese Coastal longline fleet for the first time. This resolves a significant data gap, although Japan Coastal longline aggregate data for years prior to 1994 continue to be generated by using the annual catch estimates disaggregated by time and area. These data also do not include vessel numbers (refer to Section 2.7)*

2.2 Coverage rates

20. Data provided by CCMs which do not represent full coverage may be listed as a data gap, for example:

- For several fleets, particularly those of the small Pacific island countries, better estimates of historical coverage rates of logsheet and unloadings data are required to improve annual catch estimates and aggregated catch and effort data. In this regard, the identification and rescue of historical data are required.

21. Section 4 of this paper provides a description of the coverage of the scientific data available for the WCPFC stock assessments. Vessel Monitoring System (VMS) data, aggregated to the trip level, continue to be refined for determining and improving coverage and have been used with great effect to improve data coverage for years since 2009, inclusive. Future versions of this paper may use VMS data to produce graphs/tables showing coverage of WCPFC data.

2.3 Nationality of the catch

22. The consistent assignment of "fishing nation" in all types of scientific data has a number of important implications within the SC and other areas of the Commission's work. With the establishment of a WCPFC Conservation Management Measure (CMM) on chartering (the latest being CMM 2012-05 – see <http://www.wcpfc.int/doc/CMM-2012-05/Conservation-and-Management-Measure-Charter-Notification-Scheme>), procedures for the assignment of catch data to national entities have been developed but require further refinement to cater for all cases of charter situations. These procedures are required to ensure that "double-counting" of catch and effort data provided by both the flag and chartering entities does not occur.

23. The current procedures used by the WCPFC data service provider for the assignment of "fishing nation" to the scientific data are as follows:

- The assignment of ‘fishing nation’ for the FSM Arrangement (FSMA) purse-seine vessels has been based on the FSMA ‘home party’ principle since the mid-1990s and this assignment has continued through the WCPFC process;
- The assignment of ‘charter nation’ for Philippine-flagged vessels, based in PNG and managed by PNG-associated companies, to PNG predates the WCPFC and this assignment has continued through the WCPFC process;
- The assignment of ‘fishing nation’ for other vessels will only be considered through the CMM 2012-05 charter notification scheme, in particular Paras. 2 and 3.
- Once a charter notification has been reviewed, approved and published by the WCPFC Secretariat, the WCPFC data service provider will attribute the catch and effort of the flag state to the chartering nation, as long as the following CRITERIA have been satisfied for each year of the charter:
 - i. The flag state has removed, or has identified, the catch/effort for the chartered vessels in their annual catch estimates, aggregate, operational and size data;
 - ii. The charter nation have corresponding annual catch estimates, aggregate, operational and size data for their charter vessels;
 - iii. There is consistency between the data removed/identified by the flag state and the data compiled by the charter nation.
- If these criteria have been met, then the attribution of catch/effort to the charter nation is undertaken. For the year of the charter, all catch/effort for the charter vessel is attributed to the chartering nation for the duration of the charter. If more than one nation notifies the WCPFC with the charter of a particular vessel, then it is the nation that first advises the WCPFC with the charter notification that will be listed as chartering that vessel;
- If these criteria have not been met, then it is not possible to undertake the attribution of catch/effort to the charter nation without the risk of “double-counting” occurring and catch/effort remains attributed to the flag state.
- If the attribution of catch/effort to the charter nation is not possible, then the charter notification will remain listed and acknowledged until such time as these criteria are satisfied through some resolution process.

24. Developments during the past year include:

- *SPC continues to maintain the CHARTER database table which contains the information contained in the charter notifications submitted by Coastal states to the WCPFC under the requirements of the CMM on Charter Notification Scheme (CMM 2012-05). This database is used to assign the charter nation in the catch and effort data.*
- *The attribution of catch for vessels identified under the WCPFC Charter notification scheme (as outlined in WCPFC, 2012) has been undertaken in the WCPFC data.*

25. Outstanding issues in this area include,

- For years prior to 2012, Chinese Taipei and other relevant flag states are requested to exclude the catch/effort for their flagged vessels which are listed in the WCPFC Charter notifications from the data (annual catch estimates, aggregate and operational data) they submit to the WCPFC. These CCMs should confirm or otherwise whether this has been done.

2.4 Annual catch estimates by EEZ

26. Section 4 of the *Scientific Data to be provided to the Commission* (i.e. Catch and effort data aggregated by time period and geographic area) indicates that -

“If the coverage rate of the operational catch and effort data that are provided to the Commission is less than 100%, then catch and effort data that have been raised to represent the total catch and effort shall also be aggregated by periods of year and areas of national jurisdiction and high seas within the WCPFC Statistical Area.”

27. Developments during the past year include:

- *Japan provided Annual catch estimates by EEZ and high seas areas for the period 2008-2013 for longline, pole-and-line and purse seine gears. These data have been included in the WCPFC database for Annual catch estimates by Area. Japan has now satisfied this particular data provision requirement and we look forward to the provision of this type of data for years prior to 2008.*
- *Chinese Taipei provided Annual catch estimates by EEZ and high seas areas for longline (DWFN fleet-2012-2013 and STLL fleet-2011-2013) and purse seine (2013) gears. These data have been reviewed but the longline estimates have not been included in the WCPFC databases since they are inconsistent with the Annual catch estimates for the WCPFC Convention Area. This provision is significant step to satisfying this requirement and we look forward to further collaboration with Chinese Taipei to improve these estimates.*

28. Several CCMs have not provided operational catch and effort data, so they are obliged under this requirement of the data provision rules to provide catch (by species) and effort data aggregated by YEAR and EEZ/High seas areas to the WCPFC. The CCMs that do not yet provide operational data are therefore required to provide these aggregate data (China and the Republic of Korea), as is listed in Table 4 and reiterate in Section 3.2 below.

2.5 Operational catch and effort data

29. Coastal states (which are members of the SPC and FFA) collect operational catch and effort data through bilateral access agreements with foreign fleets fishing in their waters; these data are processed and held by the SPC on behalf of the coastal states. Operational catch and effort data are not available outside the EEZs of FFA member countries for Japanese fleets, the Korean distant-water longline fleet, and the Chinese and Chinese Taipei distant-water longline fleets that target bigeye and yellowfin.

30. Operational catch and effort data, together with fine-scale oceanographic data that may affect catch rates, are required for the development of indices of abundance used in WCPFC stock assessments. Operational catch and effort data are also required to determine the spatial distribution of the catch in relation to EEZs, the high seas areas and other management-related areas, which is fundamental work of the Commission.

31. Significant progress has been made with the provision of historical operational data over the past few years (see Section 4.3 below and Tables 7 and 8). Significant developments in recent years:

- *Provision of operational data for the EU Spanish longline fleet for 2004-2013;*
- *Provision of operational data for the EU Spanish purse seine fleet for 2001-2013*
- *Provision of operational data for the American Samoa longline fleet for 2007-2013*

32. There are now only four CCMs with non-domestic fleets operating throughout the WCPFC area which have yet to notify of their intent to provide operational catch/effort data to the WCPFC. In this respect, the Seventh Regular Session of the Commission (Anon., 2011) requested CCMs with issues in providing data to submit a draft plan of how impairments to the provision of data can be resolved. To date two CCMs have provided reasons for the impediments (see Appendix A3 and A4) but none of these CCMs have submitted plans to resolve impediments for the provision of operational catch and effort data (but see para 39 for methods used to overcome these problems in the stock assessment process).

“Para. 173: WCPFC7 acknowledged the importance of providing complete and accurate data in a timely way and urged CCMs to improve the provision of data to the Commission. WCPFC7 requested that CCMs that have issues in providing accurate and complete data in a timely manner should identify those issues clearly to the Commission. At TCC7 CCMs should provide a draft plan of how impairments to the provision of data will be dealt with as rapidly as possible. CCMs are encouraged to assist others as they are able to do so and the Commission should continue to evaluate methods to assist in this matter.”

33. There was further deliberation on the issues regarding the provision of operational data, where the report of WCPFC9 (Anon., 2012a) indicated

136. Data provision shortfalls by other CCMs were noted and SC and TCC were requested to provide a paper to WCPFC10 on the implications for the Commission's science, monitoring and compliance functions due to the ongoing failure by several major fleets to provide operational data.

34. The SC9 reiterated the important implications of the ongoing failure in the provision of operational data for the Commission's science listed in last year's data gaps paper [Williams (2013) para 34] :

- *There are many instances in the Commission's work where a breakdown of catch/effort by areas of national jurisdiction and HIGH SEAS is required and this is not possible without operational data. Currently, for example, estimates of EEZs and the HIGH SEAS catch/effort are constrained by the lack of operational data;*
- *The absence of operational data has made it difficult to ensure that double-counting is not occurring when attributing catches from flag states to charter nations;*
- *Several studies using fine-scale operational data have identified important trends that are not evident in the aggregate data but need to be considered in the assessments (e.g. Hoyle et al., 2010). Better access to operational data would potentially provide a better understanding of historical trends that are currently not taken into account in the assessments using aggregate data; for example, obtaining a better understanding of declines in longline bigeye tuna CPUE which are not apparent without access to operational data;*
- *Fine-scale models, such as the SEAPODYM model, can only use operational level data as the fishery-dependent data input. Currently, the outputs of SEAPODYM models are constrained by the lack of operational data.*

35. Further, the independent review of the 2011 bigeye stock assessment (Ianelli et al., 2012) recommended the need to have arrangements for access to operational data from all fleets to identify changes in targeting and year-area interactions, analyses that cannot be undertaken with aggregate data.

36. Further, the SC9 provided a specific recommendation (see para 77-(c) of the SC9 Report - Anon. (2014d)) which was subsequently accepted by WCPFC10 (Anon., 2014e - Paras 181 and 182).

- *"The Commission note the advice set out in para. 34 of working paper SC9-ST-WP-01 on the implications for the Commission's science programme of the failure to provide operational data that was requested by WCPFC9."*

37. The SC9 provided another recommendation (accepted by the WCPFC10) seeking further information from those CCMs yet to provide operational data (see para 77-(d) of the SC9 Report - Anon. (2014d))

- *"The WCPFC Secretariat formally contact each of the CCMs identified as either i) not providing operational data, and/or ii) not providing the number of vessels for each spatial unit in their aggregate data, and request the following:*
 - (i) *That they provide these data to the Commission in order to meet their obligations of Scientific Data to be Provided to the Commission.*
 - (ii) *That information is provided on what constraints hinder their ability to provide operational data to the Commission, and actions being taken to address this issue.*
 - (iii) *That CCMs confirm whether their aggregate data, as provided, can be included into the WCPFC public domain data".*

38. A letter from the WCFPC Executive Director requesting information was sent out in April 2014 to those CCMs with operational data gaps (Belize, China, Indonesia, Japan, Korea and Chinese Taipei) and, to date, there have been three acknowledgements and two CCMs (Japan and Chinese Taipei) responding with information (refer to the APPENDIX).

39. For the countries yet to provide operational data, there have been some positive developments in arranging for the WCPFC scientific service providers access to operational data for the work of the Commission through collaborative visits to both SPC and the CCM's country. However, these opportunities are time-limited, incur additional costs, and do not provide the necessary access or time required to satisfy the wide range of Commission work that can only be achieved with substantially more access to the operational data.

40. Positive developments during the past year include:

- *Three scientists from Chinese Taipei visited SPC headquarters in February 2014 to collaborate with SPC Scientists and, in particular, facilitate access to their operational data for analyses related to stock assessments. The work included the development of a PROTOCOL for generating a dataset of Taiwanese Longline data to be used for scientific purposes. While this dataset is not at the operational level, it is at a better resolution than the aggregated 5°x5°/month aggregate data and suitable for conducting standardised CPUE analyses that are not possible with the aggregated data. The analytical work using this finer-scale dataset that was commenced during the visit is described in McKechnie et al. (2014).*
- *In the past year, there have been informal discussions between Korea and SPC on providing the WCPFC scientific service providers access to the Korea operational data under an MOU for collaboration between SPC and Korean scientists. Unfortunately, there has not been any progress on this initiative since discussions at TCC9.*

2.6 Aggregate catch and effort data

41. Certain stock assessments require aggregate catch and effort data that cover the extent of the stock for that species³. In the case of bigeye tuna, for example, stock assessments cover the Pacific Ocean and therefore the provision of aggregated longline data is required to cover the Pacific Ocean. In the case of south Pacific albacore, stock assessments cover the Pacific Ocean, south of the equator.

This data gap has been resolved through the data exchange Memorandum of Cooperation (MOC) with IATTC (see <http://www.wcpfc.int/node/2684>). In June 2012, historical aggregate longline data for the Eastern Pacific Ocean (EPO) were provided and the WCPFC now holds aggregate longline data for the main longline fleets for the Pacific Ocean for a period of 1950-2013.

42. Outstanding issues in this area include:

- In some instances, the aggregated catch and effort data provided to the WCPFC for the most recent year of activities (e.g. 2013) have not been raised and/or represent incomplete coverage of activities, particularly for the latter months of the year. Confirmation that coverage is complete and uniform for all months of the most recent year is important to ensure it is taken into account within the stock assessment projections. This issue resulted in a decision at SC9 to use the cut-off year for the 2014 tuna assessments at 2012. Electronic logbook reporting (E-Reporting) has been touted as the means to resolve the lags in the provision of catch/effort data in the future.
- In some instances, it has not been possible to reconcile the aggregate longline catch data with annual catch estimates.

Japan now provided catch in weight by species in their longline aggregate data provision covering years 2008-2013. It is hoped that catch in weight can also be provided for their aggregate longline data prior to 2008.

- In some instances, the unit of catch provided in the aggregate longline catch data is not suitable for use in stock assessments. For example,

³ The provision of distant-water longline data covering the whole Pacific was a change in the guidelines on the Provision on Scientific Data to the Commission that was approved at WCPFC4 in December 2007.

- *the aggregated catch data provided for the distant-water Chinese longline fleet for 2003-2007 are in units of “kilograms” only, and the stock assessments require the catch to be in “numbers of fish” by species.*
- *The catch in the EU Spanish longline operational data (2004-2013) which is used to generate their aggregate data is in “kilograms” only, and the stock assessments require the catch to be in “numbers of fish”.*
- There have been improvements in the provision of aggregate data for the key shark species, but instances where (i) some shark species catches are not provided, and/or (ii) shark species catches are much lower than expected (i.e. under-reported) are two of the main gaps apparent in this area.
- While annual catch estimates by EEZ/high seas are classified as ‘aggregate data’, the issues involving the provision of this type of data are specifically dealt with in Section 2.4.

2.7 Number of vessels in the aggregate data

43. The compilation of public domain catch and effort data has been hampered by the lack of key effort information (number of vessels) in the aggregate data provided by CCMs. In acknowledging the difficulties in filtering aggregate data in order to adhere to the Commission’s rules for the dissemination of public domain data (see Para. 9 of the rules), WCPFC6 agreed to the following recommendation put forward by the Ad Hoc Task Group for Data (AHTG–Data) :

“188. WCPFC6 agreed, as advised by the AHTG–Data and recommended by TCC5, that the Commission amend its Procedures and Standards for Scientific Data to be Provided to the Commission to include in Section 4 (Catch and effort data aggregated by time period and geographic area) the following new paragraph:

CCMs are to provide, to the extent possible, the number of individual vessels per stratum and area covered by their operational data with the aggregated catch and effort data they submit to the Commission.”

44. CCMs that provide operational logsheet data to the Commission, or the SPC-member countries that provide operational logsheet data to the SPC, are **not** required to provide this additional information since the WCPFC Data Managers (SPC) can undertake the work of filtering out the strata representing the activities of less than 3 vessels in the process of aggregating the operational data.

45. The current status of the provision of “number of individual vessels per stratum” for those CCMs that only provide aggregate data is as follows:

- Chinese Taipei has provided information on the number of vessels per stratum in their provision of aggregate data for their distant-water (DWLL) and offshore (STLL) longline fleets for each since 2007 (i.e. 2007-2013). This information will therefore allow the production of a public domain version of their aggregate data for these years only but not the entire time series of their aggregate data.
- The USA has filtered their aggregated longline data to remove strata which represent the activities of less than 3 vessels because this is a requirement in their national legislation. The aggregate data they provide to the WCPFC are therefore considered to be in the public domain.
- *Japan has provided information on the number of vessels per stratum in their provision of aggregate data for their longline, pole-and-line and purse seine fleets for the period 2008-2013. This information will therefore allow the production of a public domain version of their aggregate data for these years only but not the entire time series of their aggregate data. Vessel numbers have not yet been provided in the aggregate data for the Japan Coastal Longline fleet.*
- China has yet to provide information on the number of vessels per stratum with their aggregate longline data.
- Korea has yet to provide information on the number of vessels per stratum with their aggregate longline data.

46. With the recent provision of additional information from key fleets on vessel numbers and advice on whether to apply the ‘three-vessel’ rule to their aggregate data (see letters in the APPENDIX), the method of compiling the WCPFC public domain data will be reviewed during the coming year in an attempt to provide a more useful version, at least for more recent years⁴ (see <https://www.wcpfc.int/node/4648>).

2.8 Species composition data for purse seiners

47. Species composition data collected by observers and port samplers are needed to improve estimates of the catches of skipjack, yellowfin and bigeye tuna for purse-seine fleets. This issue is being addressed through:

- (i) the establishment of 100% observer coverage in the purse-seine fishery since January 2010;
- (ii) the recommendation to implement observer spill sampling made through the WCPFC Project 60; and
- (iii) initiatives related to the collection of landings data and cannery receipts.

48. The collection of paired “spill” and “grab” samples by observers is an important WCPFC project which is fundamental for the estimation of size selectivity bias in grab samples of the purse-seine species and size composition. A description of the estimation of selectivity bias and the use of grab samples corrected for selectivity bias to adjust catch and length data can be found in Lawson (2010, 2011a, 2012 and 2013), and Lawson & Lasi (2012 and 2013). The WCPFC annual catch estimates and aggregate data have been adjusted to reflect best estimates of skipjack, yellowfin and bigeye tuna in the WCPFC purse seine fishery based on these analyses. More recent work (Lawson, 2014) compares the species composition determined from different types of data (observer data, market data, cannery receipts and port sampling data).

3. RECENT PROVISIONS OF SCIENTIFIC DATA TO THE WCPFC

49. Under the policy for the provision of data to the Commission, annual catch estimates and aggregated catch and effort data must be provided by 30 April of the following year (see “Reporting obligations” at the following web page <http://www.wcpfc.int/status-data-provision>).

3.1 Annual Catch Estimates

50. Tables 1 and 2 list the dates on which catch estimates for 2012 and 2013, respectively, were provided, and include notes on the data that have been provided, mainly highlighting gaps or problems in those data (4th column) and general notes on the data provided (5th column).

51. Annual catch estimates for 2012 have now been provided by all CCMs. Annual catch estimates for 2013 have now been provided by all CCMs.

52. For 2012 annual catch estimates, there were 28 out of 33 CCM fleets (85%) that had provided estimates by the 30 April 2013 deadline last year. The 2013 annual catch estimates for ALL CCM fleets had been provided by the 30th April 2014 deadline which was a significant achievement. Provisional estimates were provided by Indonesia, Philippines and Vietnam prior to the 30th April 2014 deadline, and were updated following respective annual catch estimates workshops held in May and June. Revisions to annual catch estimates were also received from other CCMs prior to July 2014, and we expect further revisions to be included in the WCPFC Part 1 Annual Reports.

⁴ It is noted that an analysis provided in SC5 ST WP-5 showed that even if the number of vessels per stratum is provided, aggregate catch and effort data for individual flags that have been filtered for less than three vessels will not be accurate. The current WCPFC public domain data are essentially useless and non-representative since too many cells have been removed as a result of applying the three-vessel rule. See <http://www.wcpfc.int/doc/st-wp-08/timothy-lawson-and-peter-williams-status-public-domain-catch-and-effort-data-held-west>

53. The quality of estimates provided continues to improve with a reduction in the number of data-gap notes assigned to the annual catch estimates for 2013 compared to 2012 estimates; the main gaps in the annual catch estimates relates to the provision of:

- Estimates for key shark species, and
- Estimates of discards.

3.2 Aggregate Catch/Effort data

54. Tables 3 and 4 list the dates on which aggregated catch and effort data were provided for 2012 and 2013, respectively. The notes in the 4th column of the table refer to instances where the data provided do not satisfy criteria specified in the guidelines for the provision of Scientific Data to the WCPFC, and general notes on the data are provided in the 5th column (these notes are not data gap issues but are informative).

55. Pacific Island countries provide operational catch/effort (logsheet) data [which are aggregated by the OFP] on a regular basis and their provisions of aggregate catch/effort data have therefore been flagged as being provided on the deadline (30 April 2014) since they were available at that time.

56. Notable issues in aggregate catch/effort data that have been resolved in the past two years include:

- *Japan has provided the catch in weight by species in their longline aggregate data provision for the first time. This provision covers years 2008-2013 and resolves a significant data gap in reconciling their aggregate data with their annual catch estimates. It is hoped that catch in weight can also be provided for their aggregate longline data prior to 2008;*
- *Japan (2008-2013) and Chinese Taipei (2012-2013) have recently provided “Annual catch estimates by areas of national jurisdiction (EEZs) and high seas”.*

57. The notable gaps in the provision of 2012 and 2013 aggregate data include:

- It is not clear whether incomplete aggregate longline data for the latter months of 2013 (i.e. the most recent year) have been provided for some fleets;
- Catches for shark species improved but catches for some species were not provided by a number of longline fleets, or the coverage of the catch is considered clearly lower than expected. Catches of shark species for the Pacific Island fleets will be estimated from available observer data in the future, noting that a number of coastal states are now implementing the new, extended longline logbooks which require foreign and domestic fleets fishing in their waters to report catches of shark to the species level;
- Several fleets (e.g. China and Korea) do not provide operational data, in which case, the “*Scientific Data to be Provided to the Commission*” requires the provision of aggregate data for the “Annual catch estimates by areas of national jurisdiction (EEZs) and high seas” which have not been provided for these fleets;
- 2012 and 2013 aggregate catch and effort data for the domestic fleet from Indonesian (longline, purse seine and pole-and-line) were not provided at the time of submitting this paper. Logsheet data for these fleets are available so we hope that aggregated data can be submitted in the future.

58. In general, the timeliness of the provision of aggregate catch/effort data continues to improve with nearly all CCMs providing data by the deadline of 30th April 2014. The quality of aggregate data provided continues to improve with a reduction in the number of notes assigned to the aggregate data in recent years.

3.3 Operational catch/effort data

59. Table 5 shows the schedule for the submissions of 2013 operational catch and effort data to the WCPFC and Table 6 summarises the authorizations and notifications for the release of historical operational data to the WCPFC. As at July 2014, the status of the provisions of historical operational data to the WCPFC is as follows:

- Historical operational data for the Asian tuna fleets (primarily China, Japan, Korea and Chinese Taipei) are the main data gaps;
- Authorization for the release to the WCPFC of historical operational catch and effort for their national fleets, held by the SPC-OFP on behalf of their member countries, has been received from **ALL** SPC member countries;
- Operational purse-seine logsheet data have been provided by the Philippines (for 2004 activities) and Japan (for 2001–2004 activities) in relation to CMM 2008-01. For Japan, the provision of these data was in accordance with paragraphs 15 and 16 of CMM 2008-01;
- Operational catch and effort data have been provided for the EU Spanish purse seine fleet for 2001–2013;
- Operational catch and effort data for the EU Spanish longline fleet for the period 2004-2013 have been provided;
- Operational catch and effort data for the US Hawaiian Longline fleet have now been provided for 2007-2013; Data prior to 2007 remain outstanding.
- Operational catch and effort data for the American Samoa longline fleet have now been provided for 2007-2013; Data for 2005 and 2006 remain outstanding.
- Operational catch and effort data for the Philippines domestic purse seine fleet are available to the WCPFC science and data service providers (SPC);
- Operational catch and effort data for the Vietnam longline fleet are available to the WCPFC science and data service providers (SPC);
- Operational catch and effort data for the Indonesian domestic longline and purse-seine fleets are outstanding.

60. Significant progress continues to be made in the provision of historical operational catch and effort data to the WCPFC and it is hoped that the outstanding operational catch and effort data can be provided by relevant CCMs in the near future.

3.4 Size data

61. Table 7 shows the schedule for the submissions of 2013 size data to the WCPFC. The notes in the 4th column of the table refer to instances where the data provided do not satisfy criteria specified in the guidelines for the provision of Scientific Data to the WCPFC, and general notes on the data are provided in the 5th column (these notes are not data gap issues but are informative). The gaps in the provision of 2013 size data refer to the flag-state obligation to provide size data to the WCPFC, although in several instances where there are gaps, size data have been collected and made available for the fleet by Coastal states.

3.5 Regional Observer Programme (ROP) data

62. The SPC/OFP has been processing observer data on behalf of their member countries for more than 15 years and the Seventh Regular Session of the Commission (6–10 December 2011) approved the continuation of this work in respect of the Regional Observer Programme (ROP) data in the short-medium term (Anon., 2011). Williams et al. (2014) describes the recent developments, future work and initiatives with respect to ROP data management; this paper also shows the current coverage of available, processed observer data.

63. Authorisations/notifications to provide ROP data to the Commission have now been received from all major observer service providers (see Table 8). The backlog in the provision of ROP data to SPC continues to improve and some of the issues related to rejected data resolved. SPC is also collaborating with a number of stakeholders (e.g. national fisheries authorities, FFA and the fishing industry) in undertaking trials in observer E-Reporting and E-Monitoring which has the potential for efficiency gains in the timeliness and quality of observer data (see Hosken et al., 2014a, and Hosken et al., 2014b).

64. Significant provisions of ROP data in the past year include –

- *Provision of 2013 and 2014 observer data from the Philippines National observer programme active on vessels permitted to fish in HSP1 (these data represent 100% observer coverage);*
- *Provision of 2013 ROP data for the Hawaiian and American Samoa longline vessels.*

3.6 Transmission of scientific data to the WCPFC Secretariat

65. The WCPFC scientific data, comprising the historical time series of annual catch estimates, aggregate catch/effort data, size data, and the operational (logsheet) and ROP data (authorized for release) continues to be provided to the WCPFC Secretariat on a regular quarterly basis. The latest versions of WCPFC annual catch estimates, operational and aggregate catch/effort data were provided to the WCPFC Secretariat in June 2014, and the latest ROP data were downloaded to the WCPFC server in July 2014.

66. In addition to the provision of data, the WCPFC Secretariat has been the provided with the following services over the past year:

- Training on the new Observer TUBs Reporting system was provided in June 2014. This new reporting system includes a dedicated menu for CMM reporting based on ROP data to WCPFC Secretariat staff during visit in June 2014;
- The provision of the CES database system with the WCPFC data updates (in December 2013, June 2014). This system is regularly updated and also available for download through a secure login/password.

4. COVERAGE RATES

67. Figures 1 and 2 present the coverage rates since 2000 for processed operational (logsheet) catch and effort data, unloadings data and observer data for the tropical purse seine and longline fisheries, respectively⁵. The coverage rates for operational data refer to the target tuna catches from individual fishing operations reported on logbooks that are held by the OFP. Coverage rates for observer data refer to the catch of target tunas that were reported by observers. Coverage rates for unloadings data refers to the landings of target tuna catch that were monitored and reported.

68. Figure 3 shows coverage rates for available aggregate and operational catch and effort data by fleet for the longline fishery covering recent years (2000–2013). Figure 4 shows coverage rates for available aggregate and operational catch and effort data by fleet for the purse-seine fishery covering recent years (2000–2013).

69. Figure 5 shows coverage rates for available size composition data by fleet for the longline fishery covering recent years (2000–2013). Figure 6 shows coverage rates for available size composition data by fleet for the purse-seine fishery covering recent years (2000–2013).

70. Coverage rates for recent years should increase as additional data are compiled.

⁵ Refer to <http://www.wcpfc.int/coverage-rates-tuna-fishery-data> for an explanation of how coverage is determined. Essentially, coverage estimates are determined using the annual catch estimates for target tuna species in the WCPFC Convention Area as the basis for comparison to other data types.

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TABLES

Table 1. Provision of 2012 annual catches estimates to the WCPFC

COUNTRY / TERRITORY / ENTITY	GEAR(s)	Date submitted	DATA-GAP Notes	General NOTES
Australia	LL, PS, PL, HL,TR	30 Apr 2013		G, H
Belize	LL	1 May 2013	12, 13	
Canada	TR	14 Mar 2013		
China	LL, PS	28 Apr 2013	12, 13	
Cook Islands	LL, TR	19 Apr 2013		F, G, H
Ecuador	PS	26 Apr 2013 8 Jun 2013		F
El Salvador	PS	23 Apr 2013		
Federated States of Micronesia	LL, PS	19 Apr 2013		F, G, H
Fiji Islands	LL, PL	19 Apr 2013		F, G, H
French Polynesia	LL, PL, OT	26 Apr 2013		G, H
Indonesia	LL, PS, OT	30 Apr 2013 20 Jun 2013	11, 13	F
Japan	PS	27 Apr 2013	13	
	LL, PL, TR, OT	27 Apr 2013	12, 13	
Kiribati	LL, PS, OT	19 Apr 2013		G
Republic of Korea	LL, PS	30 Apr 2013		H
Marshall Islands	LL, PS	19 Apr 2013		F, G, H
New Caledonia	LL	19 Apr 2013		G, H
New Zealand	LL, PS, TR, PL	30 Apr 2013		G, H
Niue	LL	19 Apr 2013		D
Palau	LL, PL	19 Apr 2013		D
Papua New Guinea	LL, PS	19 Apr 2013		G, H
Philippines	PS, HL, RN, OT	19 Apr 2013 20 May 2013	13	F
Portugal	LL	25 May 2013	13	F
Samoa	LL	19 Apr 2013		G, H
Senegal	LL	30 Apr 2013		D
Solomon Islands	LL	19 Apr 2013		F, H
	PS, PL	19 Apr 2013		H
Spain	LL	18 May 2013	13, 14	
	PS	30 Apr 2013	13	
Chinese Taipei	LL, PS	30 Apr 2013		
Tokelau	OT	19 Apr 2013		
Tonga	LL	19 Apr 2013		G, H
Tuvalu	LL, PS	19 Apr 2013		G, H
United States	LL, PS, TR, PL	29 Apr 2013		G, H
Vanuatu	LL, PS	19 Apr 2013		G, H
Vietnam	LL	5 Apr 2013	11,13	
	GN, PS	5 Apr 2013	13	
Wallis and Futuna	LL	19 Apr 2013		D

DATA-GAP NOTES

- 1 Total annual catches were provided by SPECIES, but not broken down by GEAR.
- 2 Marlin catch estimate not provided to the species level.
- 3 Coverage of data used to determine estimates not provided
- 4 Type(s) of data used to determine estimates not provided
- 5 Methods used to determine estimates not provided
- 6 Breakdown of active vessels by GRT size class not provided
- 7 Swordfish catch estimates only provided
- 8 Billfish catch estimates not provided for the longline gear
- 9 Estimates of all main tuna species not provided
- 10 Estimates exclude archipelagic waters catches
- 11 Estimates of shark catch by species have NOT been provided
- 12 Estimates of shark catch by SPECIES provided, but not for all KEY species taken by this fleet
- 13 Estimates of DISCARDS not provided
- 14 Estimates of ALBACORE, SWORDFISH and STRIPED MARLIN for the South Pacific Ocean have NOT been provided

GENERAL NOTES

- A Catches were estimated by the SPC/OFP while assisting with the preparation of the national fisheries report.
- B Catch estimates were taken from the national fisheries report presented at the meeting of the Scientific Committee.
- C Total annual catches can be determined by aggregating operational data that were provided on this date.
- D Fleet(s) inactive for this calendar year in the WCPFC Convention Area
- E National legislation (or policy) requires that time/area strata comprising data for less than three vessels can not be disseminated.
- F Provisional estimates initially provided, and final estimates provided prior to SC10.
- G Estimates of all KEY shark species have been provided in AGGREGATE catch/effort data, OPERATIONAL catch/effort data and/or OBSERVER data provisions
- H Estimates of DISCARDS provided in AGGREGATE catch/effort data, OPERATIONAL catch/effort data or OBSERVER data provisions
- I Pending resolution of attribution of catches according to CHARTER arrangements
- J No Discards reported - advised that full retention is assumed in these fisheries.

Table 2. Provision of 2013 annual catches estimates to the WCPFC

COUNTRY / TERRITORY / ENTITY	GEAR(s)	Date submitted	DATA-GAP Notes	General NOTES
Australia	LL, PS, PL, HL,TR	28 Apr 2014		G, H
Belize	LL	28 Apr 2014	12, 13	
Canada	TR	03 Apr 2014		
China	LL, PS	30 Apr 2014	12, 13	
Cook Islands	LL, TR	18 Apr 2014		F, G, H
Ecuador	PS	28 Apr 2014		F
El Salvador	PS	29 Apr 2014		
Federated States of Micronesia	LL, PS	18 Apr 2014		F, G, H
Fiji Islands	LL, PL	18 Apr 2014		F, G, H
French Polynesia	LL, PL, OT	29 Apr 2014		G, H
Indonesia	LL	18 Apr 2014	11, 13	F
	PS, PL, HL, TR, OT	18 Apr 2014		F, J
Japan	PS, LL	30 Apr 2014	13	
	PL, TR, OT	30 Apr 2014		
Kiribati	LL, PS, OT	18 Apr 2014		G
Republic of Korea	LL, PS	30 Apr 2014		H
Marshall Islands	LL, PS	18 Apr 2014		F, G, H
New Caledonia	LL	18 Apr 2014		G, H
New Zealand	LL, PS, TR, PL	30 Apr 2014		G, H
Niue	LL	30 Apr 2014		D
Palau	LL, PL	30 Apr 2014		D
Papua New Guinea	LL, PS	18 Apr 2014		G, H
Philippines	PS	18 Apr 2014		F, G, H
	LL	18 Apr 2014	11, 13	F
	HL, RN, OT	18 Apr 2014		F, J
Portugal	LL	29 Apr 2014	13	F
Samoa	LL	18 Apr 2014		G, H
Senegal	LL	30 Apr 2014		D
Solomon Islands	LL	18 Apr 2014		F, H, I
	PS, PL	18 Apr 2014		H
Spain	LL	29 Apr 2014	14	
	PS	29 Apr 2014	13	
Chinese Taipei	LL, PS	18 Apr 2014		
Tokelau	OT	18 Apr 2014		F
Tonga	LL	18 Apr 2014		G, H
Tuvalu	LL, PS	30 Apr 2014		G, H
United States	LL, PS, TR, HL, PL	29 Apr 2014		G, H
Vanuatu	LL, PS	18 Apr 2014		G, H
Vietnam	LL	18 Apr 2014	11	F, J
	GN, PS	18 Apr 2014	11	F, J
Wallis and Futuna	LL	30 Apr 2014		D

DATA-GAP NOTES

- 1 Total annual catches were provided by SPECIES, but not broken down by GEAR.
- 2 Marlin catch estimate not provided to the species level.
- 3 Coverage of data used to determine estimates not provided
- 4 Type(s) of data used to determine estimates not provided
- 5 Methods used to determine estimates not provided
- 6 Breakdown of active vessels by GRT size class not provided
- 7 Swordfish catch estimates only provided
- 8 Billfish catch estimates not provided for the longline gear
- 9 Estimates of all main tuna species not provided
- 10 Estimates exclude archipelagic waters catches
- 11 Estimates of shark catch by species have NOT been provided
- 12 Estimates of shark catch by SPECIES provided, but not for all KEY species taken by this fleet
- 13 Estimates of DISCARDS not provided
- 14 Estimates of ALBACORE, SWORDFISH and STRIPED MARLIN for the South Pacific Ocean have NOT been provided

GENERAL NOTES

- A Catches were estimated by the SPC/OFP while assisting with the preparation of the national fisheries report.
- B Catch estimates were taken from the national fisheries report presented at the meeting of the Scientific Committee.
- C Total annual catches can be determined by aggregating operational data that were provided on this date.
- D Fleet(s) inactive for this calendar year in the WCPFC Convention Area
- E National legislation (or policy) requires that time/area strata comprising data for less than three vessels can not be disseminated.
- F Provisional estimates initially provided, and final estimates provided prior to SC10.
- G Estimates of all KEY shark species have been provided in AGGREGATE catch/effort data, OPERATIONAL catch/effort data and/or OBSERVER data provisions
- H Estimates of DISCARDS provided in AGGREGATE catch/effort data, OPERATIONAL catch/effort data or OBSERVER data provisions
- I Pending resolution of attribution of catches according to CHARTER arrangements
- J No Discards reported - advised that full retention is assumed in these fisheries.

Table 3. Provision of 2012 Aggregated catch and effort data to the WCPFC

COUNTRY / ENTITY	GEAR TYPE	Date Submitted	DATA-GAP Notes	General NOTES
Australia	LL, PL, PS, TR	30 Apr 2013		C,I
Belize	LL	1 May 2013	18, 19	
Canada	TR	14 Mar 2013		
China	LL (DWFN)	28 Apr 2013	10, 18, 19, 20, 22	F
	LL (offshore)	28 Apr 2013	10, 18, 19, 20	F
	PS	28 Apr 2013	6, 8, 9, 13, 19	D
Chinese Taipei	LL (DWFN)	30 Apr 2013	19, 22	A, F, H, I
	LL (small)	30 Apr 2013	19	A, F, H, I
	PS	30 Apr 2013	13, 19	
Cook Islands	LL, TR	30 Apr 2013		J, I
Ecuador	PS	8 Jun 2013		C
El Salvador	PS	23 Apr 2013		C
Federated States of Micronesia	LL, PS	30 Apr 2013	21	J
Fiji Islands	LL, PL	30 Apr 2013	21	J
French Polynesia	LL	30 Apr 2013		J
Indonesia	LL, PS, OT			
Japan	LL	27 Apr 2013	18, 19, 20, 22	A, F
	PL	27 Apr 2013	19, 20	
	PS	27 Apr 2013	19, 20	
Kiribati	LL, PS	30 Apr 2013	21	J
Marshall Islands	LL, PS	30 Apr 2013	21	J
New Caledonia	LL	30 Apr 2013		J
New Zealand	LL, PL, HL, PS	30 Apr 2013		C,I
Niue	LL	5 Mar 2013		E
Palau	LL, PL	30 Apr 2013		E
Papua New Guinea	LL, PS	30 Apr 2013		J, I
Philippines	PS, HL			
	RN, OT			
Portugal	LL	25 May 2013	1, 8, 10, 12, 18, 22	
Republic of Korea	LL	30 Apr 2013	18, 19, 20, 22	A, F
	PS	30 Apr 2013	4, 13, 19	
Samoa	LL	30 Apr 2013	21	J
Senegal	LL	30 Apr 2013		E
Solomon Islands	LL			K
	PL, PS	30 Apr 2013	18	J
Spain	LL	18 May 2013	1, 8, 10, 22	C, F
	PS	30 Apr 2013		C
Tonga	LL	30 Apr 2013		J
Tuvalu	LL, PS	30 Apr 2013	21	J
United States	LL (American Samoa)	29 Apr 2013		B, I
	LL (Haw aii)	29 Apr 2013		B, I
	PS (Treaty)	30 Apr 2013		J
	TR (North Pacific)	29 Apr 2013		B
	TR (South Pacific)	29 Apr 2013		B
Vanuatu	LL, PS	30 Apr 2013	21	J
Vietnam	LL, GN, PS			
Wallis and Futuna	LL	30 Apr 2013		E

DATA-GAP NOTES

- 1 The catch data are in units of weight (kgs or metric tonnes) only, rather than both numbers of fish and weight.
- 2 The catch data are in units of numbers of fish only, rather than both numbers of fish and kilograms.
- 3 The catch data are for swordfish only.
- 4 The unit of effort is "days on which a set was made", rather than "days fished or searched".
- 5 The unit of effort is "sets" rather than "days fished or searched".
- 6 The catch/effort data are not stratified by the required categories of school association
- 7 The units of effort are unknown, or non-standard
- 8 No effort data provided
- 9 The data are aggregated by 5°x5° instead of 1°x1°
- 10 The 5°x5°/month Longline catch and effort data are not stratified by "Hooks between Floats"
- 11 Coverage of data provided is less than 50%
- 12 No breakdown of Billfish species catch provided
- 13 The estimation of bigeye in the reported yellow fin-plus-bigeye catch has not been undertaken in these data
- 14 The spatial aggregation is non-standard (must be 5°x5° for Longline; 1°x1° for surface fisheries)
- 15 Data have not been "raised" to represent total catch and effort
- 16 Species composition of main tuna species catch does correspond to annual catch estimates
- 17 Aggregate data provided for the WCPO area (Pacific Ocean west of 150°W) and not the WCPFC Convention Area
- 18 Catches of KEY shark species have been provided, but (i) not all KEY SPECIES COVERED, and/or (ii) COVERAGE of shark species catches is considered LOW.
- 19 Annual Catch and Effort estimates by areas of national jurisdiction (EEZs) and High Seas have NOT BEEN PROVIDED.
- 20 Vessel numbers by YEAR, MONTH and AREA used to filter public domain data have NOT BEEN PROVIDED
- 21 Catches of KEY shark species have not been provided, but can potentially be estimated from observer data.
- 22 Aggregate Catch/Effort data for ALBACORE, SWORDFISH and STRIPED MARLIN for the south Pacific Ocean east of the WCPFC Area have NOT been provided

GENERAL NOTES

- A Unraised data stratified by 5°x5°, month and hooks between floats were also provided
- B National legislation (or policy) requires that time/area strata comprising data for less than three vessels can not be
- C Aggregate data not provided, but have been generated from Operational data submitted to the WCPFC.
- D Aggregate data not provided or incomplete, but have been generated from annual catch estimates and operational data made available by the Coastal States.
- E This fleet was inactive in the WCPFC Convention Area.
- F Distant-water longline fleet data do not cover the entire Pacific Ocean (required for stock assessments of certain species)
- G Represents a combination of data provided by the flag state (for domestically-based vessels) and coastal states
- H Vessel numbers per Month and Area provided.
- I Catches of KEY shark species provided in their AGGREGATE data
- J Aggregate data have been generated from annual catch estimates and operational data made available to the SPC by their member countries through national bilateral agreements or subregional arrangements (e.g. the US Multilateral Purse Seine treaty managed by FFA).
- K Pending resolution of attribution of catches according to CHARTER arrangements

Table 4. Provision of 2013 Aggregated catch and effort data to the WCPFC

COUNTRY / ENTITY	GEAR TYPE	Date Submitted	DATA-GAP Notes	General NOTES
Australia	LL, PL, PS, TR	28 Apr 2014		C,I
Belize	LL	28 Apr 2014	18, 19	
Canada	TR	03 Apr 2014		
China	LL (DWFN)	30 Apr 2014	10, 18, 19, 20	
	LL (offshore)	30 Apr 2014	10, 18, 19, 20	
	PS	30 Apr 2014	6, 8, 9, 13, 19, 20	D
Cook Islands	LL, TR	30 Apr 2014		J, I
Ecuador	PS	28 Apr 2014		C
El Salvador	PS	29 Apr 2014		C
Federated States of Micronesia	LL, PS	30 Apr 2014	21	J
Fiji Islands	LL, PL	30 Apr 2014	21	J
French Polynesia	LL	29 Apr 2014		J
Indonesia	LL, PS, PL			
	HL, TR, GN, OT			N
Japan	LL	30 Apr 2014	22	A, F, H, I, L
	PL	30 Apr 2014		L
	PS	30 Apr 2014		L
Kiribati	LL, PS	30 Apr 2014	21	J
Marshall Islands	LL, PS	30 Apr 2014	21	J
New Caledonia	LL	30 Apr 2014		J, I
New Zealand	LL, PL, HL, PS	30 Apr 2014		C, I
Niue	LL	30 Apr 2014		E
Palau	LL, PL	30 Apr 2014		E
Papua New Guinea	LL, PS	30 Apr 2014		J, I
Philippines	PS	30 Apr 2014	21	M
	LL			
	HL, RN, OT			N
Portugal	LL	29 Apr 2014	1, 10, 12, 22	C, F
Republic of Korea	LL	30 Apr 2014	19, 22	F
	PS	30 Apr 2014	4, 13, 19	
Samoa	LL	30 Apr 2014		J, I
Senegal	LL	30 Apr 2014		E
Solomon Islands	LL	30 Apr 2014	21	K
	PL, PS	30 Apr 2014		J
Spain	LL	29 Apr 2014	1, 10, 22	C, F
	PS	29 Apr 2014		C
Chinese Taipei	LL (DWFN)	30 Apr 2014	22	F, H, I, L
	LL (small)	30 Apr 2014		F, H, I, L
	PS	30 Apr 2014	13	L
Tonga	LL	30 Apr 2014		J, I
Tuvalu	LL, PS	30 Apr 2014	21	J
United States	LL (American Samoa)	29 Apr 2014		B, I
	LL (Hawaii)	29 Apr 2014		B, I
	PS (Treaty)	29 Apr 2014		J
	TR (North Pacific)	29 Apr 2014		B
	TR (South Pacific)	29 Apr 2014		B
Vanuatu	LL, PS	30 Apr 2014	21	J
Vietnam	LL, GN	30 Apr 2014	21	M
	PS			N
Wallis and Futuna	LL	30 Apr 2014		E

DATA-GAP NOTES

- 1 The catch data are in units of weight (kgs or metric tonnes) only, rather than both numbers of fish and weight.
- 2 The catch data are in units of numbers of fish only, rather than both numbers of fish and kilograms.
- 3 The catch data are for swordfish only.
- 4 The unit of effort is "days on which a set was made", rather than "days fished or searched".
- 5 The unit of effort is "sets" rather than "days fished or searched".
- 6 The catch/effort data are not stratified by the required categories of school association
- 7 The units of effort are unknown, or non-standard
- 8 No effort data provided
- 9 The data are aggregated by 5°x5° instead of 1°x1°
- 10 The 5°x5°/month Longline catch and effort data are not stratified by "Hooks between Floats"
- 11 Coverage of data provided is less than 50%
- 12 No breakdown of Billfish species catch provided
- 13 The estimation of bigeye in the reported yellow fin-plus-bigeye catch has not been undertaken in these data
- 14 The spatial aggregation is non-standard (must be 5°x5° for Longline; 1°x1° for surface fisheries)
- 15 Data have not been "raised" to represent total catch and effort
- 16 Species composition of main tuna species catch does correspond to annual catch estimates
- 17 Aggregate data provided for the WCPO area (Pacific Ocean west of 150°W) and not the WCPFC Convention Area
- 18 Catches of KEY shark species have been provided, but (i) not all KEY SPECIES COVERED, and/or (ii) COVERAGE of shark species catches is considered LOW.
- 19 Annual Catch and Effort estimates by areas of national jurisdiction (EEZs) and High Seas have NOT BEEN PROVIDED.
- 20 Vessel numbers by YEAR, MONTH and AREA used to filter public domain data have NOT BEEN PROVIDED
- 21 Catches of KEY shark species have not been provided, but can potentially be estimated from observer data.
- 22 Aggregate Catch/Effort data for ALBACORE, SWORDFISH and STRIPED MARLIN for the south Pacific Ocean east of the WCPFC Area have NOT been provided

GENERAL NOTES

- A Unraised data stratified by 5°x5°, month and hooks between floats were also provided
- B National legislation (or policy) requires that time/area strata comprising data for less than three vessels can not be disseminated.
- C Aggregate data not provided, but have been generated from Operational data submitted to the WCPFC.
- D Aggregate data not provided or incomplete, but have been generated from annual catch estimates and operational data made available by the Coastal States.
- E This fleet was inactive in the WCPFC Convention Area.
- F Distant-water longline fleet data do not cover the entire Pacific Ocean (required for stock assessments of certain species)
- G Represents a combination of data provided by the flag state (for domestically-based vessels) and coastal states
- H Vessel numbers per Month and Area provided.
- I Catches of KEY shark species provided in their AGGREGATE data
- J Aggregate data have been generated from annual catch estimates and operational data made available to the SPC by their member countries through national bilateral agreements or subregional arrangements (e.g. the US Multilateral Purse Seine treaty managed by FFA).
- K Pending resolution of attribution of catches according to CHARTER arrangements
- L Annual Catch and Effort estimates by areas of national jurisdiction (EEZs) and High Seas HAVE BEEN PROVIDED.
- M Aggregate data not provided, but have been generated from Annual catch estimates and operational data provided to SPC directly for stock assessments.
- N "It is recognized that certain members and cooperating non-members of the Commission may have practical difficulties in compiling operational data for fleets comprised of small vessels."

Table 5. Provision of 2013 Operational catch and effort data to the WCPFC

FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES
Australia	LL, PL, PS, TR	28 Apr 2014		E
Belize	LL			
Canada	TR			A
China	LL, PS			
Cook Islands	LL, TR	30 Apr 2014	9	C, E
Ecuador	PS	28 Apr 2014		
El Salvador	PS	29 Apr 2014		
Federated States of Micronesia	LL, PS	30 Apr 2014	8	C
Fiji Islands	LL, PL	30 Apr 2014	9	C, E
French Polynesia	LL	29 Apr 2014	9	C
	PL			G
	TR			G
Indonesia	LL, PS, PL			
	HL, TR, GN, OT			G
Japan	PS			F
Japan	LL, PL			F
Kiribati	LL, PS	30 Apr 2014	9	C
Republic of Korea	LL, PS			
Marshall Islands	LL, PS	30 Apr 2014	9	C
New Caledonia	LL	30 Apr 2014	9	C, E
New Zealand	LL, PL, TR, PS	30 Apr 2014		E
Niue	LL	30 Apr 2014		A
Palau	LL, PL	30 Apr 2014		A
Papua New Guinea	LL, PS	30 Apr 2014	9	C, E
Philippines	PS	30 Apr 2014	8	H
	LL			
	HL, RN, OT			G
Portugal	LL	29 Apr 2014	1, 4, 7, 9, 10	
Samoa	LL	30 Apr 2014	9	C
Senegal	LL	30 Apr 2014		A
Solomon Islands	LL, PS, PL	30 Apr 2014	9	C
Spain	LL	29 Apr 2014	1, 7, 10	E
	PS	29 Apr 2014		
Chinese Taipei	LL, PS			F
Tonga	LL	30 Apr 2014	9	C, E
Tuvalu	LL, PS	30 Apr 2014	9	C
United States	LL (American Samoa)	29 Apr 2014		E
	LL (Hawaii)	29 Apr 2014		E
	PL, HL, TR (trop)			G
	PS, TR (ALB)	29 Apr 2014		B
Vanuatu	LL, PS	30 Apr 2014	9	C
Vietnam	LL, GN	30 Apr 2014	8	H
	PS			G
Wallis and Futuna	LL	30 Apr 2014		A

DATA-GAP NOTES

- 1 For LONGLINE GEAR - "Branchlines between floats" not provided
- 2 For LONGLINE GEAR - "Hooks per set" not provided
- 3 "Activity" not provided
- 4 "Time of set" not provided
- 5 For PURSE SEINE GEAR - categories of "School Association" were not provided
- 6 Coverage of data provided is less than 50%
- 7 Discard information not included
- 8 Catches of KEY shark species have not been provided.
- 9 Catches of KEY shark species have been provided, but (i) not all KEY SPECIES COVERED, and/or (ii) COVERAGE of shark species catches is considered LOW.
- 10 The catch data are in units of weight (kgs or metric tonnes) only, rather than both numbers of fish and weight.

GENERAL NOTES

- A No activity in the WCPFC Convention Area during this year
- B Operational Logsheet data provided by FFA on behalf of their member countries on a regular basis
- C Operational Logsheet data provided to SPC by their member countries on a regular basis
- D Operational Logsheet data provided to SPC by their member countries on a regular basis, but authorisation to pass on to WCPFC yet to be provided.
- E Catches of shark by species have been provided
- F Annual Catch and Effort estimates by areas of national jurisdiction (EEZs) and High Seas HAVE BEEN PROVIDED.
- G "It is recognized that certain members and cooperating non-members of the Commission may have practical difficulties in compiling operational data for fleets comprised of small vessels."
- H Operational Logsheet data provided to SPC for analyses related to stock assessments.

Table 6. Provision of historical operational catch/effort data to the WCPFC

ENTITY	Flag State Data (Convention Area)			Coastal State Data (EEZ only)		NOTES
	GEAR(s)	Date of Notification	Provided by	GEAR(s) / FLEET(s)	Date of Notification	
Australia	LL, PL, PS, TR	16 Apr 2008	SPC-OFP	ALL	16 Apr 2008 12 Aug 2009	SPC authorised to release all data, including data provided to SPC prior to 2005
Belize	LL		No		Not Applicable	
Canada	TR		No		Not Applicable	
China	LL, PS		No			
Cook Islands	LL	10 Jun 2009	SPC-OFP			SPC authorised to release
Ecuador	PS	30 Apr 2010	Ecuador		Not Applicable	Provided to WCPFC (for 2010-2011 only)
El Salvador	PS	15 Oct 2007	El Salvador		Not Applicable	Provided to WCPFC
Federated States of Micronesia	LL, PS	13 Jan 2010	SPC-OFP			SPC authorised to release
Fiji Islands	LL, PL	22 Jun 2009	SPC-OFP			SPC authorised to release
French Polynesia	LL, PL, TR	1 Jul 2010	SPC-OFP			SPC authorised to release
Indonesia	LL, PS, OT	01 May 2009	Indonesia (Partial)		Not Applicable	Indonesian Data rescue project (mostly pre 1990s data); See NOTE (3)
Japan	PS	17 Apr 2009	Japan (Partial)		Not Applicable	(1) [2001-2004 only]
Japan	LL, PL		No		Not Applicable	
Kiribati	PS, LL	11 Oct 2010	SPC-OFP			SPC authorised to release
Republic of Korea	LL, PS		No		Not Applicable	
Marshall Islands	LL, PS	9 Jul 2009	SPC-OFP			SPC authorised to release
Nauru	LL	19 Aug 2009	SPC-OFP	ALL	19 Aug 2009	SPC authorised to release
New Caledonia	LL	2 Aug 2010	SPC-OFP		Not Applicable	SPC authorised to release
New Zealand	LL, PL, HL, PS	20 March 2008	SPC-OFP	ALL	20 March 2008	SPC authorised to release
Niue	LL	3 Sep 2009	SPC-OFP			SPC authorised to release
Palau	LL, PL	28 Feb 2011	SPC-OFP			SPC authorised to release
Papua New Guinea	LL, PS	10 Dec 2010	SPC-OFP			SPC authorised to release
Philippines	PS	28 Aug 2013	Philippines		Not Applicable	Letter from Director of BFAR authorising SPC to release the data (28 August 2013)
	LL, HL, RN, OT		No		Not Applicable	See NOTE (3)
Samoa	LL	15 Nov 2010	SPC-OFP			SPC authorised to release
Senegal	LL	21 Nov 2008	Senegal		Not Applicable	Provided to WCPFC (2007-2008)
Solomon Islands	LL, PS, PL	4 Dec 2010	SPC-OFP			SPC authorised to release
Spain	LL	23 March 2012	EU		Not Applicable	Provided to WCPFC
	PS	7 Jul 2011	EU		Not Applicable	Provided to WCPFC
Chinese Taipei	LL, PS		No		Not Applicable	
Tonga	LL	11 Jan 2011	SPC-OFP			SPC authorised to release
Tuvalu	PS	9 Mar 2011	SPC-OFP			SPC authorised to release
United States	LL	27 Aug 2011	NMFS--NOAA (Partial)		Not Applicable	(2) Data provided since enactment of the WCPFC Implementation Act (January 17, 2007)
United States	TR, PL		No		Not Applicable	See NOTE (3)
United States	PS	30 Apr 2008	FFA / SPC-OFP		Not Applicable	US Multilateral treaty only (since 1988)
Vanuatu	LL, PS	22 Dec 2008	SPC-OFP			SPC authorised to release
Vietnam	LL, PS, GN					See NOTE (3)

NOTES

- 1 Flag state data provided in accordance with paragraph 15 and 16 of Conservation and Management Measure for Bigeye and Yellow fin Tuna in the Western and Central Pacific Ocean (CMM 2008-1).
- 2 Under advice of NOAA General Counsel, NMFS is disclosing to the WCPFC U.S. longline fleet data (Haw aii-based longline fishery) following enactment of the WCPFC Implementation Act (January 17, 2007), consistent with Section 506(d) of the Act and implementing regulations under 50 CFR § 600.220.
- 3 "It is recognized that certain members and cooperating non-members of the Commission may have practical difficulties in compiling operational data for fleets comprised of small vessels."

Table 7. Provision of 2013 Size data to the WCPFC

FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES
Australia	LL	28 Apr 2014		B, C
	PL, PS, TR			J
Belize	LL		7	
Canada	TR	03 Apr 2014		G
China	LL, PS		8	H
Cook Islands	LL	30 Apr 2014		A, H
Ecuador	PS		8	H
El Salvador	PS		8	H
Federated States of Micronesia	LL, PS	30 Apr 2014		A, H, I
Fiji Islands	LL, PL	30 Apr 2014		A, H
French Polynesia	LL	29 Apr 2014		A, H
	PL, TR			J
Indonesia	LL, PS, OT	20 Jun 2014		A, H
Japan	PS	30 Apr 2014		A, H
Japan	LL, PL	30 Apr 2014		A, H, I
Kiribati	LL		7	
Kiribati	PS	30 Apr 2014		A, H
Republic of Korea	LL, PS	30 Apr 2014	3	H
Marshall Islands	LL, PS	30 Apr 2014		A, H
New Caledonia	LL	30 Apr 2014		A, H
New Zealand	LL, PL, PS, TR	30 Apr 2014		A, H
Niue	LL	30 Apr 2014		G
Palau	LL, PL	30 Apr 2014		G
Papua New Guinea	LL, PS	30 Apr 2014		A, H
Philippines	PS, HL, RN, OT	30 Apr 2014		A, H
	LL		8	
Portugal	LL		7	
Samoa	LL	30 Apr 2014		A, H
Senegal	LL	30 Apr 2014		G
Solomon Islands	LL, PS, PL	30 Apr 2014		A, H
Spain	LL		7	
	PS		8	H
Chinese Taipei	LL	30 Apr 2014		A, H, I
	PS	30 Apr 2014	3	H
Tonga	LL	30 Apr 2014		A, H
Tuvalu	LL, PS	30 Apr 2014		A, H
United States	LL (American Samoa)	29 Apr 2014		B, E, F
	LL (Hawaii)	29 Apr 2014		B, E, F
	HL	29 Apr 2014		B, E, F
	TR	29 Apr 2014		A
	PS	30 Apr 2014	8	A, H
Vanuatu	LL, PS	30 Apr 2014		A, H, I
Vietnam	LL, GN	30 Apr 2014		A
	PS		7	
Wallis and Futuna	LL	30 Apr 2014		G

DATA-GAP NOTES

- 1 Temporal stratification at the YEAR level has been provided only
- 2 Spatial stratification is larger than 10° latitude x 20° longitude
- 3 There is no breakdown by SCHOOL ASSOCIATION in PURSE SEINE samples provided by the FLAG STATE
- 4 The data were not stratified by latitude/longitude
- 5 LENGTH INTERVAL in data provided does not comply to WCPFC Requirements
- 6 WEIGHT INTERVAL in data provided does not comply to WCPFC Requirements
- 7 No SIZE data provided by the FLAG STATE
- 8 No SIZE data provided by the FLAG STATE, but SIZE data provided for this fleet by COASTAL STATES

GENERAL NOTES

- A LENGTH DATA PROVIDED and LENGTH INTERVALS comply with the WCPFC Requirements where data provided (Skipjack tuna – 1cm, Albacore tuna – 1cm, Yellow fin tuna – ideally 1cm, but not more than 2 cm, Bigeye tuna – ideally 1cm, but not more than 2 cm, Billfish – ideally 1cm, but not more than 5 cm)
- B WEIGHT DATA PROVIDED and WEIGHT INTERVALS comply with WCPFC requirements (1kgs)
- C Weights are gilled-and-gutted (kilograms)
- D Weights are gilled-and-gutted-and-tailed (kilograms)
- E Weights are gilled-and-gutted (pounds)
- F Broad areas which can be equated to 10° latitude x 20° longitude blocks were provided
- G No activity by this fleet in the WCPFC Convention Area
- H Includes data provided through the WCPFC Regional Observer Programme (ROP) data
- I Includes data collected through PORT SAMPLING by COASTAL STATES and provided to SPC on a regular basis.
- J Acknowledged to be small-scale/insignificant fisheries

Table 8. Status of ROP data provisions to the WCPFC

OBSERVER PROGRAMME	ROP Data Provisions			NOTES
	GEAR(s) covered	Date of Notification	Data to be provided by	
Australia	LL	22 Nov 2010	SPC/OFP	Provided on behalf of Australia; data from 15 Feb 2008 onwards
<i>China</i>	<i>LL, PS</i>		—	
Cook Islands	LL	29 Sep 2010	SPC/OFP	Provided on behalf of Cook Islands (MMR)
Federated States of Micronesia	LL, PS	17 Jun 2010	SPC/OFP	Provided on behalf of FSM (NORMA)
Fiji Islands	LL	30 Nov 2010	SPC/OFP	Provided on behalf of Fiji Fisheries
French Polynesia	LL	30 Nov 2010	SPC/OFP	Provided on behalf of French Polynesia
FSM Arrangement (FFA)	PS	May 2011	FFA (SPC)	Provided on behalf of PNA
<i>Indonesia</i>	<i>LL, PS</i>		—	
<i>Japan</i>	<i>PS, LL, PL</i>		—	
Kiribati	PS, LL	11 Oct 2010	SPC/OFP	Provided on behalf of Kiribati Fisheries
<i>Republic of Korea</i>	<i>LL, PS</i>		—	
Marshall Islands	LL, PS	24 Nov 2010	SPC/OFP	Provided on behalf of Rep. Of Marshall Islands
Nauru	LL, PS	7 Jul 2010	SPC/OFP	Provided on behalf of Nauru Fisheries
New Caledonia	LL	12 Jan 2011	SPC/OFP	Provided on behalf of New Caledonia
New Zealand	LL	1 Jan 2009	MAF/NZ	Provided with annual data submission
Niue	LL	3 Mar 2011	SPC/OFP	Provided on behalf of New Caledonia
Palau	LL, PS	8 Mar 2011	SPC/OFP	Provided on behalf of Palau
Papua New Guinea	LL, PS	2 Jun 2010	SPC/OFP	Provided on behalf of PNG/NFA
Philippines	PS	31 Dec 2011	BFAR, Philippines	Processed data for for both ROP (HSP1 activities) and non-ROP trips provided regularly to SPC.
Samoa	LL	1 Jan 2013	SPC/OFP	Provided on behalf of Samoa
Solomon Islands	LL, PS, PL	24 Sep 2010	SPC/OFP	Provided on behalf of Solomon Is. Fisheries
<i>Chinese Taipei</i>	<i>LL, PS</i>	11 July 2011	Fisheries Agency, Council of Agriculture	Data for LONGLINE ROP-defined trips provided regularly (covers 2010-2012 at this stage)
Tonga	LL	12 Jan 2011	SPC/OFP	Provided on behalf of Tonga Fisheries
Tuvalu	PS	9 Mar 2011	SPC/OFP	Provided on behalf of Tuvalu Fisheries
United States	LL	1 Sep 2010	NMFS	ROP trip data regularly provided to WCPFC; does not include the provision of HW LL data provided to SPC prior to 2010.
US Multilateral Treaty (FFA)	PS	May 2011	FFA (SPC)	Provided on behalf of Parties to US MLT
Vanuatu	LL, PS	30 Nov 2010	SPC/OFP	Provided on behalf of Vanuatu Fisheries
Vietnam	LL, PS, GN	10 June 2011	DECAFIREP, Ministry of Fisheries	Hard-copy data for 12 trips sent to SPC for processing. Data represent non-ROP trips.

NOTES

- 1 Table assumes that observer trips collecting ROP-defined data conducted by China, Indonesia, Japan, Korea, Philippines and Chinese Taipei are to be included.

FIGURES

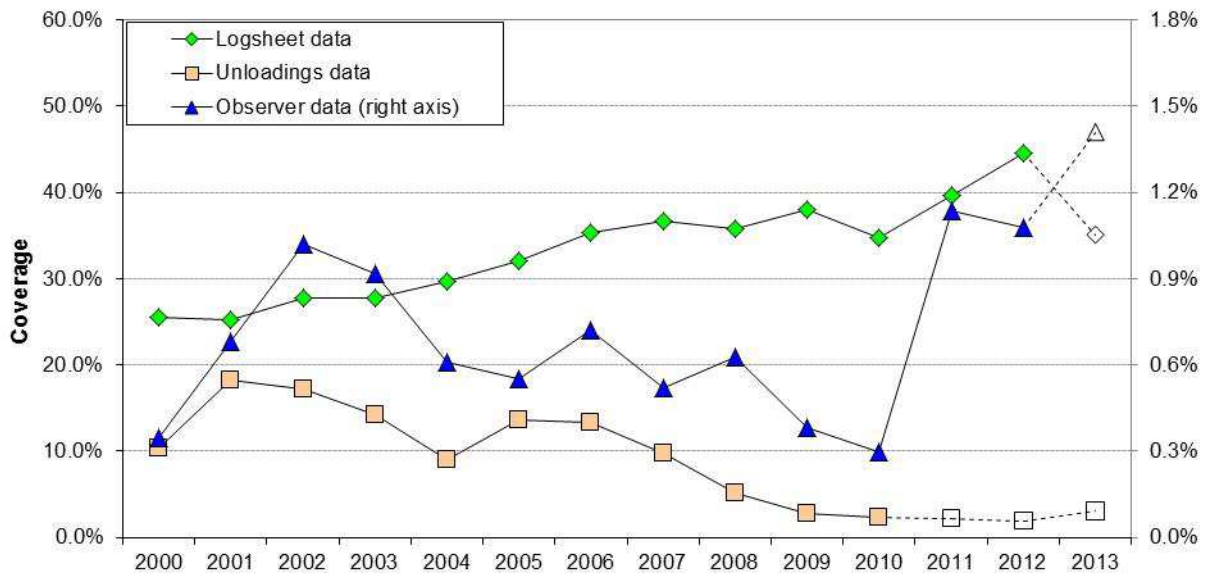


Figure 1. Annual trends in the coverage of WCPO LONGLINE data
 Data held by SPC/OFP, some of which are provided to the WCFPC; 2012 and 2013 data are provisional

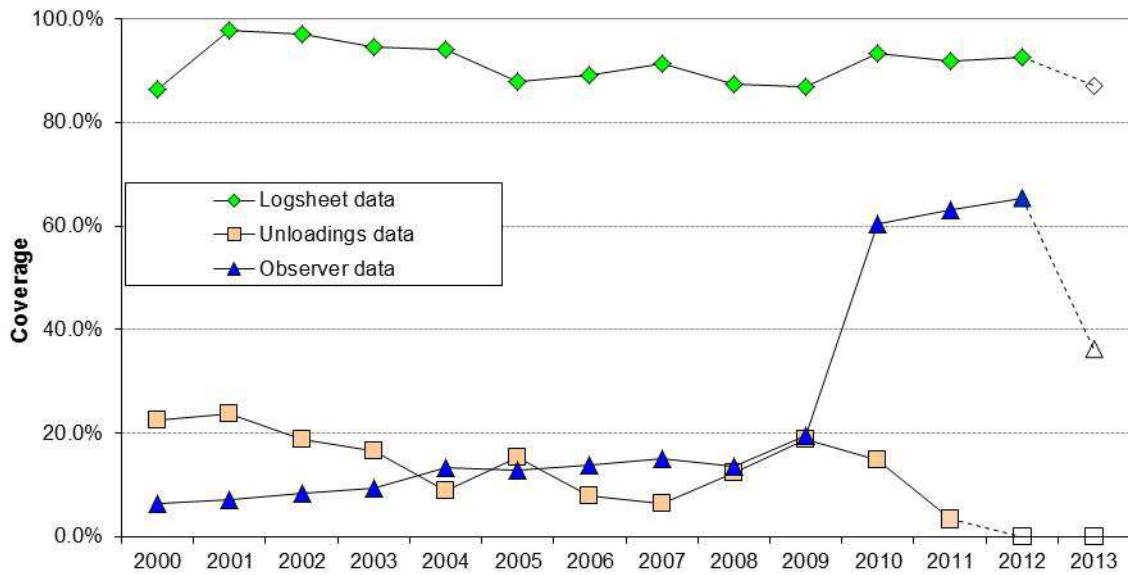


Figure 2. Annual trends in the coverage of tropical WCPO PURSE SEINE data
 Purse seine tropical fishery: 20°N-20°S, excludes the domestic fisheries of Indonesia and Philippines
 Data held by SPC/OFP, some of which are provided to the WCFPC; 2012 and 2013 data are provisional

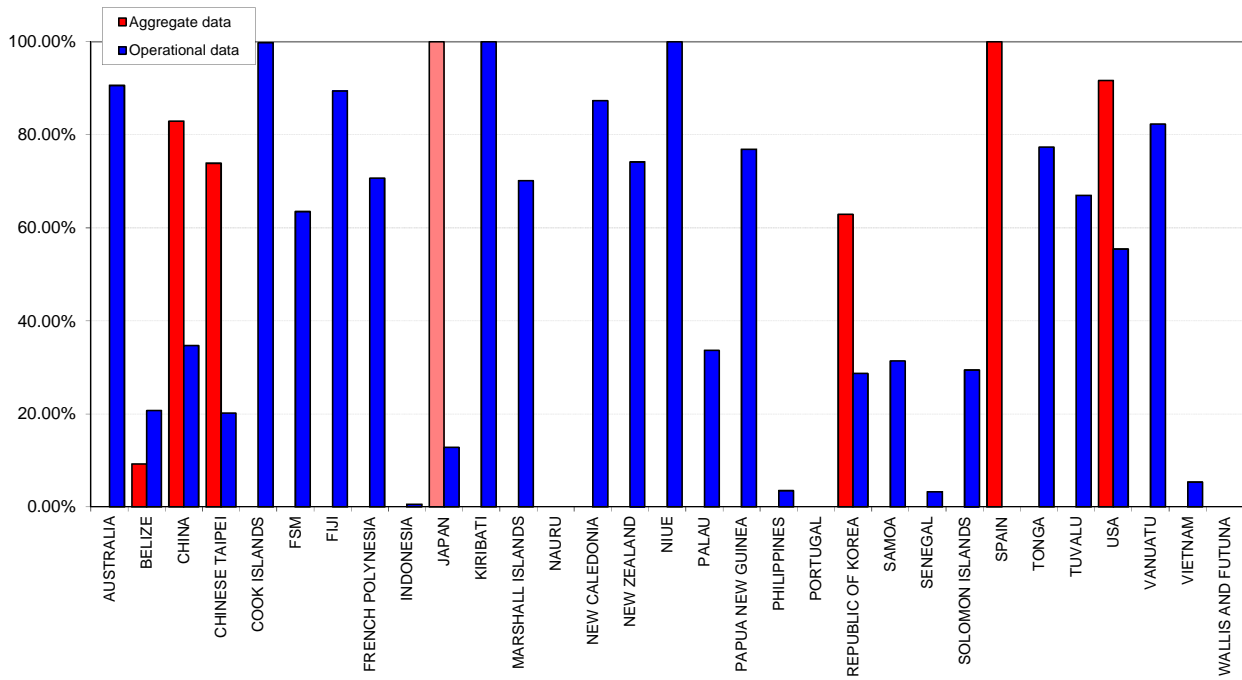


Figure 3. Coverage of (i) aggregate and (ii) operational catch/effort data by fleet from the *LONGLINE FISHERY*

Aggregate data provided to the WCPFC;

Operational data held by SPC/OFP, some of which are provided to the WCFPC; covers 2000–2013

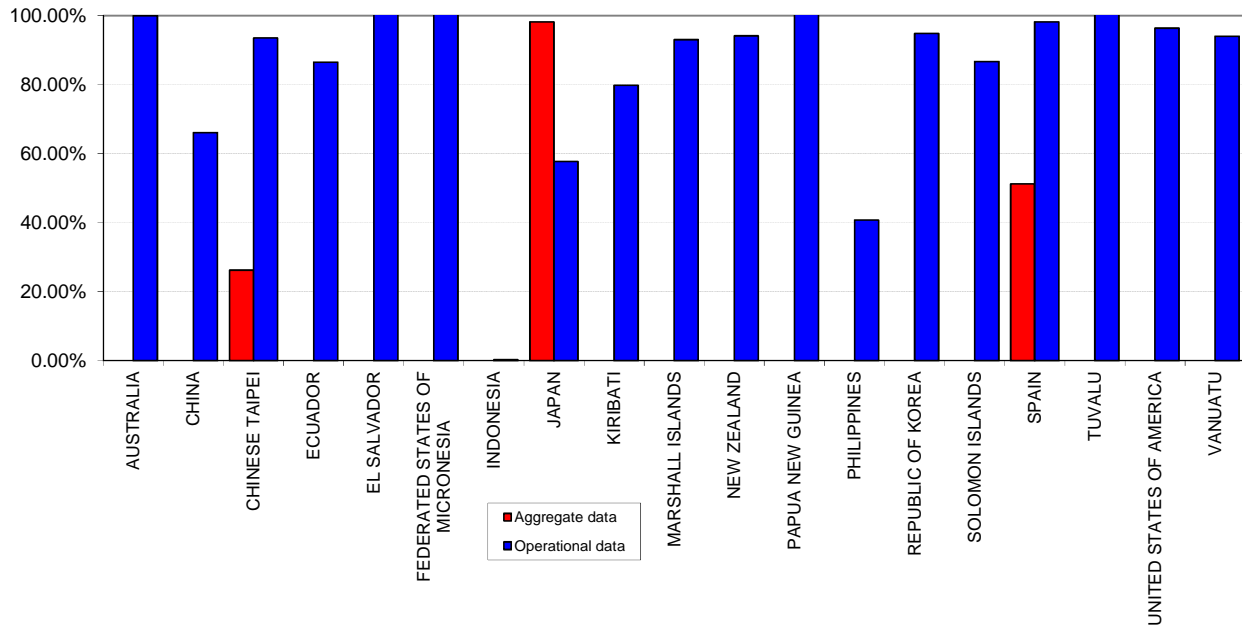


Figure 4. Coverage of (i) aggregate and (ii) operational catch/effort data by fleet from the *PURSE-SEINE FISHERY*

Aggregate data provided to the WCPFC;

operational data held by SPC/OFP, some of which are provided to the WCFPC; covers 2000–2013

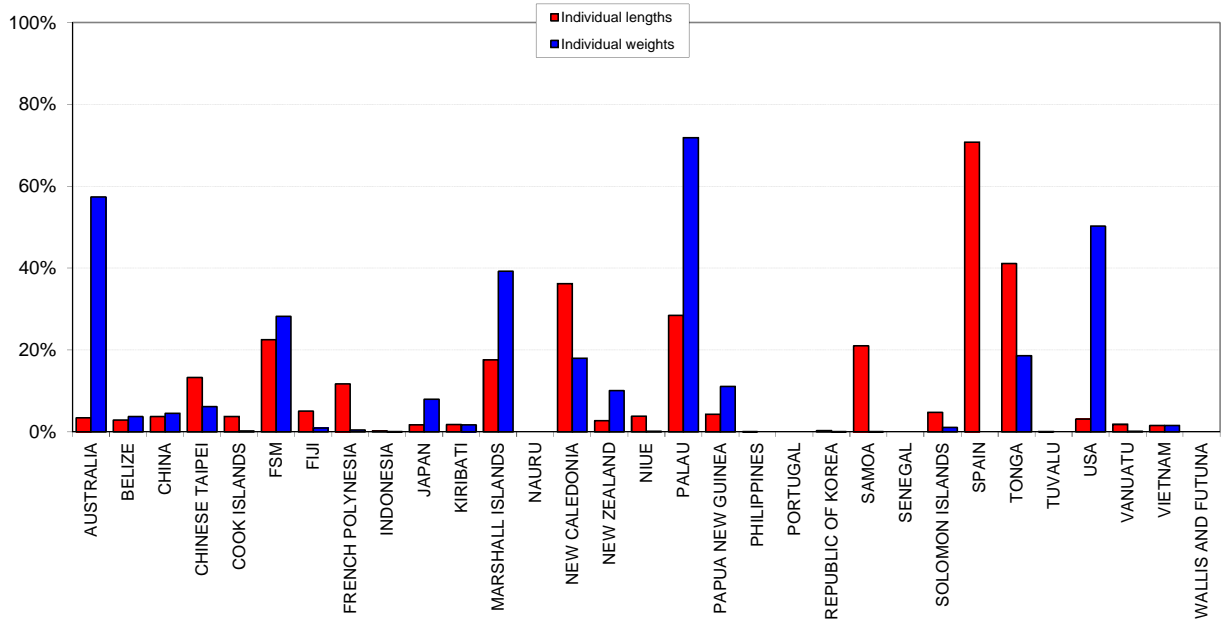


Figure 5. Coverage of size composition data by fleet from the LONGLINE FISHERY

Data provided to the WCPFC; covers 2000–2013

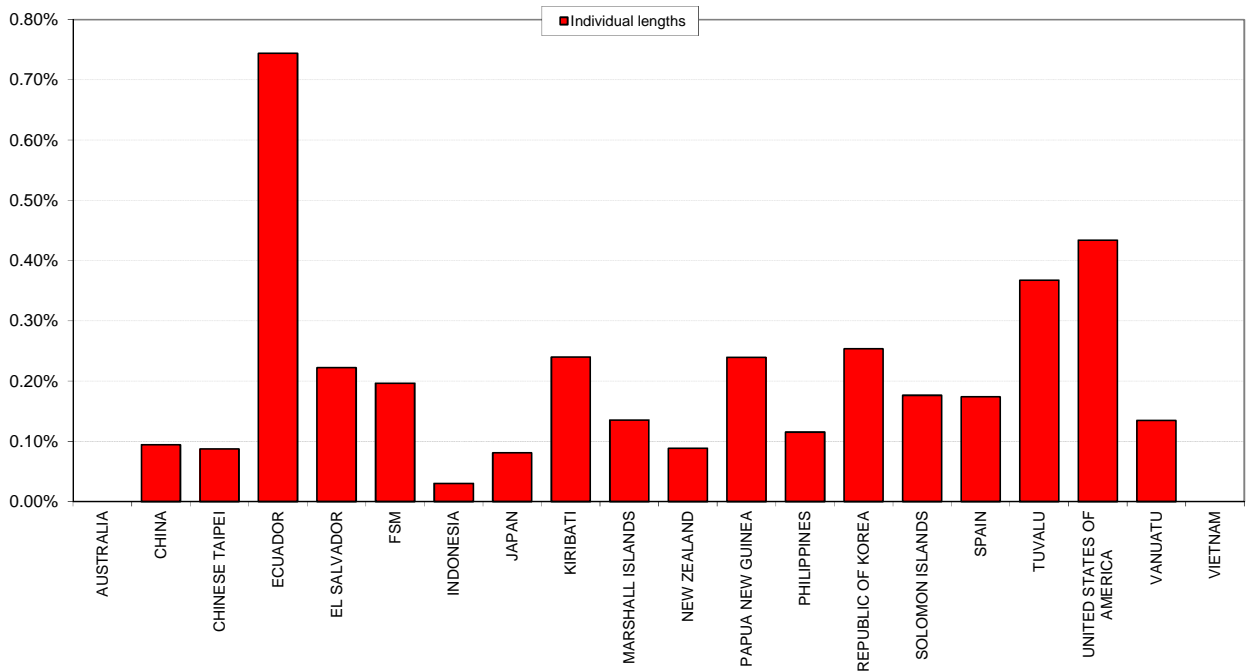


Figure 6. Coverage of size composition data by fleet from the PURSE-SEINE FISHERY

Data provided to the WCPFC; covers 2000–2013

APPENDIX – Letters to CCMs on Operational data gaps

A1. Letter from WCPFC Executive Director



Date: 29 April 2014

Recipient:

<p>Valerie Lanza Director of High Seas Fisheries Belize High Seas Fisheries Unit Ministry of Finance Government of Belize Suite 204, Marina Towers Newtown Barracks, Belize City Director.bhsfu@gmail.com</p>	<p>Mr. Liu Xiaobing Director Division of International Cooperation Bureau of Fisheries and Fisheries Law Enforcement Ministry of Agriculture, China No. 11 Nongzhanguan Nanli Beijing, China 100125 xiaobing.liu@hotmail.com</p>	<p>Mr. Toni Ruchimat DFRM, DGCF Ministry of Marine Affairs and Fisheries Gedung Mina Bahari II, Lantai 10, Jln. Medan Merdeka Timur No. 16, Jakarta Republic of Indonesia 10110 truchimat@yahoo.com</p>
<p>Mr Hisashi Endo Chief Counselor Fisheries Agency of Japan 1-2-1 Kasumigaseki, Chiyoda-ku Tokyo, Japan 100-8907 hisashi_endo@nm.maff.go.jp</p>	<p>Mr. Yongseok Kang Director, International Cooperation Division Ministry of Oceans and Fisheries Government Complex Sejong Bldg#5, Room 508, 94, Dasom2-ro Sejong Special Self-governing City, 339-012, Korea ykang66@korea.kr</p>	<p>Mr. Tzu-Yaw Tsay Deputy Director General Fisheries Agency No. 2, Chao-chow St. Taipei, Taiwan tzu yaw@msl.fi.gov.tw</p>

Dear [Recipient],

Greetings from Pohnpei.

As requested by the Scientific Committee (Paragraph 77.d, SC9 Summary Report) and endorsed by the Commission, I am writing to you regarding the submission of operational data:

77.d. The WCPFC Secretariat formally contact each of the CCMs identified as (i) not providing operational data and/or (ii) not providing the number of vessels for each spatial unit in their aggregate data, and request the following:

- i) That they provide these data to the Commission in order to meet their obligations of Scientific Data to be Provided to the Commission;
- ii) That information is provided on what constraints hinder their ability to provide operational data to the Commission, and actions being taken to address this issue
- iii) That the CCMs confirm whether their aggregate data, as provided, can be included into the WCPFC public domain data.

On behalf of the Commission, may I request your full commitment with the obligation to submit operational data, due to its' critical importance in regional stock assessments. If there are constraints that currently prevent the provision of operational data to the Commission, can you please elaborate on these constraints and the actions taken to resolve each constraint, as per point (ii) above.

If you are currently unable to provide full operational data, I would appreciate your cooperation in providing the number of vessels for each stratum (time/area) in your aggregate data (6th paragraph of the "Scientific Data to be provided to the Commission"), reiterated in the recommendation above.

Western and Central Pacific Fisheries Commission

PO Box 2356
Kolonias, Pohnpei 96941
Federated States of Micronesia

TEL: +691-320-1992, 1993
FAX: +691-320-1108
Email: wcpfc@mail.fm



If you are currently unable to provide full operational data, please note that in accordance with 3rd paragraph in Section 4 of the “Scientific Data to be provided to the Commission”, you are required to provide Annual catch and effort estimates aggregated by areas of national jurisdiction and high seas within the WCPFC Statistical Area.

Finally, can you please respond to the item (iii) in the recommendation above.

I hope this information can be provided by 31 May 2014 to provide sufficient time for SPC to compile and include it in the SC10 paper, “Scientific Data Available to the WCPFC Commission”.
For your information, Annex 1 below summarizes the status of CCMs with operational data gaps.

Thank you very much in advance for your cooperation.

Sincerely,

[Signed]

Professor Glenn Hurry
Executive Director
WCPFC Secretariat

Annex 1. CCMs with operational data gaps.

Country name	Operational data	Number of vessels for each stratum (time/area) in their aggregate data	Annual Catch and Effort estimates by EEZ/high seas area	Not providing operational data but work with SPC on a temporary basis for stock assessment
Belize	NOT PROVIDED	YES	NO	NO
China	NOT PROVIDED	NO	NO	NO
Indonesia	NOT PROVIDED	NO	YES	NOT YET
Japan	NOT PROVIDED	YES (recent years only)	NO	YES
Republic of Korea	NOT PROVIDED	NO	NO	NOT YET CONFIRMED
Chinese Taipei	NOT PROVIDED	YES (recent years only)	NO	YES, INITIAL WORK

Western and Central Pacific Fisheries Commission

PO Box 2356
Kolonja, Pohnpei 96941
Federated States of Micronesia

TEL: +691-320-1992, 1993
FAX: +691-320-1108
Email: wcpfc@mail.fm

A2. Summary Table of responses

CCM's response on Letter from WCPFC Executive Director: Submission of Operational Data

Belize	
From: Valarie Lanza [mailto:director.bhsfu@gmail.com]	
Sent: Wednesday, April 30, 2014 11:34 AM	
To: Arlene Takesy	
Subject: Re: (Belize) Letter from WCPFC Executive Director: Submission of Operational Data	
Dear Arlene Greetings from Belize. I acknowledge receipt of your email with attachment. We will be providing a response shortly.	
Regards Valarie Lanza	
China	
No response received	
Indonesia	
No response received	
Japan	
From: yuujirou_akatsuka@nm.maff.go.jp [mailto:yuujirou_akatsuka@nm.maff.go.jp]	
Sent: Tuesday, May 27, 2014 1:59 PM	
To: Glenn Hurry	
Cc: Arlene Takesy; SungKwon Soh; Mr. Takashi Koya; Hisashi Endo; Mako Iioka; Miki Ogura	
Subject: Letter from Japan: Submission of Operational Data	
Dear Glenn-san On behalf of Mr. Hisashi ENDO, I am sending his response to your letter dated on April 29, 2014 as attached. Regards, Yujiro	
Republic of Korea	
No response received	
Chinese Taipei	
From: 蔡日耀 [mailto:tzuyaw@msl.f.a.gov.tw]	
Sent: Thursday, May 1, 2014 11:52 AM	
To: Arlene Takesy	
Cc: Mr. Chi-Chao Liu; SungKwon Soh; Glenn Hurry	
Subject: <FAMS1>RE: (Chinese Taipei) Letter from WCPFC Executive Director: Submission of Operational Data	
Dear Ms. Takesy; Good morning. I confirm receipt of attachment, a letter from professor Glenn Hurry.	
Best regards, Tzu Yaw TSAY	

A3. Letter of response from Japan



FISHERIES AGENCY

MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES, GOVERNMENT OF JAPAN

1-2-1, Kasumigaseki, Chiyoda-ku, Tokyo 100-8907, Japan

May 26, 2014

Professor Glenn Hurry
Executive Director
Western Central Pacific Fisheries Commission

Dear Executive Director Hurry,

In response to your letter dated on April 29, 2014, I provide you with information on constraints that prevent provision of operational data to the Commission and action taken to resolve such constraints as follows:

Constraints

Japan's domestic law, "Act of the Protection of Personal Information", prohibits government administrations to release any personal information which can be identified personal activities. Operational data is categorized as such personal information prohibited to release.

Action

Instead of providing full operational data to the Commission, Fisheries Research Agency of Japan allows SPC to use operational data through collaborative analysis at the time of stock assessment.

Further, Japan has provided the Commission 1) the number of vessels for each stratum (time/area) in our aggregate data and 2) annual catch and effort estimates aggregated by areas of national jurisdiction and high seas within the WCPFC Statistical Area on April 30, 2014.

Finally, I confirm that our aggregate data can be included into the WCPFC public domain data.

Regards,

A handwritten signature in black ink, appearing to read "Hisashi Endo".

Hisashi ENDO

Japanesc Commissioner to the WCPFC

A4. Letter of response from Chinese Taipei

行政院農業委員會漁業署
FISHERIES AGENCY
 Council of Agriculture, Executive Yuan
 No.2, Chaozhou St., Zhongzheng Dist., Taipei, TAIWAN
 TEL: 886-2-3343-6000 FAX: 886-2-3343-6097 <http://www.fa.gov.tw>

May 30, 2014

Ref: WP103-20

Professor Glenn Hurry
 Executive Director
 Western and Central Pacific Fisheries Commission
 PO Box 2356 Kolonia
 Pohnpei 96941, Federated States of Micronesia,
 (P)691-3201992

Dear Professor Hurry,

This is our response to your letter dated 29th April, 2014 to our Deputy Director-General Tsay regarding the submission of operational data.

Regarding the provision of operational data, we can't provide these data due to the constraint of our domestic regulations. However, we recognize the importance of using our data for stock assessment of the Commission. Alternatively, we have decided to cooperate with the Scientific Service Provider of WCPFC(SPC) for analyzing our data under principles of confidentiality in addition to providing the aggregated data in accordance with the alternative arrangement articulated in the "Scientific Data to be provided to the Commission". And three of our scientists went to SPC headquarter in February this year to facilitate the work of analyzing our operational data with SPC scientists. We believe this cooperation will be helpful for the stock assessment.

Besides, noticing the requirements in the "Scientific Data to be provided to the Commission" for those are currently constrained to provide the operational data, we have provided the number of vessels for each stratum (time/area) in our aggregated data since 2010 right after this



行政院農業委員會漁業署
FISHERIES AGENCY
Council of Agriculture, Executive Yuan
No.2, Chaozhou St., Zhongzheng Dist., Taipei, TAIWAN
TEL: 886-2-3343-6000 FAX: 886-2-3343-6097 <http://www.fa.gov.tw>

requirement was adopted by the Commission in 2009. And starting from this year, we provided annual catch and effort estimates aggregated by areas of national jurisdiction and high seas within the WCPFC statistical area in our scientific data.

As for the inclusion of our aggregate data into the WCPFC public domain data, we would like to point out that the Rules and Procedures for the Protection, Access to, and Dissemination of Data Compiled by the Commission clearly indicates that “Data in the public domain shall not reveal the individual activities of any vessel, company or person and shall not contain private information. Catch and Effort data in the public domain shall be made up of observations from a minimum of three vessels.” Thus, this item is acceptable for us, providing the abovementioned provision can be satisfied.

Sincerely yours,

Ding-Rong Lin
Director
Deep Sea Fisheries Division

Cc: Peter G. Williams,
Principal Fisheries Scientist
Oceanic Fisheries Programme
Secretariat of the Pacific Community (SPC)