SCIENTIFIC COMMITTEE
SIXTEENTH REGULAR SESSION

ELECTRONIC MEETING
11-20 August 2020

SCIENTIFIC DATA AVAILABLE TO THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

WCPFC-SC16-2020/ST-WP-01

SPC-OFP

ABSTRACT

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

The review of gaps in 2018 and 2019 scientific data provisions includes the assignment of a tier-scoring evaluation level. There have not been any significant developments in some categories of the main data gaps over the past five years and readers have therefore been referred to the relevant sections in past data-gap papers.

All CCMs with fleets active in the WCPFC Convention Area provided 2019 **annual catch estimates** by the deadline of the 30th April 2020. The issues previously reported in annual catch estimates have been further reduced and the lack of any estimates for key shark species remains the main gap for some CCMs, particularly in years before 2017.

Aggregate catch/effort data for 2019 were provided by the deadline of 30th April 2020 for all fleets. The quality of aggregate data provided continues to improve with a reduction in the number of data-gap notes assigned to the aggregate data in recent years. The other main data gap concerns the low coverage of operational data available to generate aggregate data for the Indonesian and Vietnam fleets, and the anticipated under-reporting of key shark species in general.

Most CCMs with active fleets provided **operational catch/effort data** for 2019, with the main gaps being

(i) the low coverage in the data provided for the Indonesian and Vietnam fleets;
(ii) the non-provision of a number of required fields in the Indonesian and Vietnam operational data (e.g. catch in number for longline and handline fisheries), and
(iii) catches of key shark species are not included in the Indonesian and Vietnam fleet data.

The coverage of 2019 operational data for some fleets is not complete (100%), although there was some improvement in coverage compared to the 2018 data.

This paper responds to five data-related recommendations from SC15, provides a brief update on the Bycatch Data Exchange Protocol (BDEP) data and makes reference to other SC16 papers for Regional Observer Programme (ROP) data and the trials on Annual Catch estimates (ACE) tables.

The NZ-funded WPEA-Improved Tuna Monitoring (WPEA-ITM) Project contributes WCPFC technical assistance to the Philippines, Indonesia and Vietnam to, *inter alia*, improve monitoring and data management of their domestic fisheries. There has been good progress in the collection and provision of data from each of these countries in recent years and the paper also lists some of the challenges that remain.

TABLE OF CONTENTS

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*" (***SciData***) 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 latest version of SciData can be found on the WCPFC web site here. The main revisions to this document since it was first adopted include:

i. The inclusion of catch estimates of key shark species and specifying the size class intervals for size data), which were adopted at the Seventh Regular Session of the Commission (WCPFC7), Honolulu, Hawaii, 6–10 December 2011 (Anon. 2011), the Ninth Regular Session of the Commission (WCPFC9), Manila, Philippines, 6–10 December 2012 (Anon. 2012) and the Tenth Regular Session of the Commission (WCPFC10), Cairns, Australia 2–6 December 2013 (Anon. 2013)

ii. The change to require estimates of discards/releases for the key WCPFC species to be submitted as a member country obligation, which was adopted at the Thirteenth Regular Session of the Commission (WCPFC13), Denarau Island, Fiji, 5–9 December 2016 (Anon. 2016).

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 (logsheet or logbook) 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.

4. The WCPFC Data Catalogue has been updated on the WCPFC web site (http://www.wcpfc.int/wcpfc-data-catalogue-0) to cover the 2019 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).

5. The Tenth Meeting of the Technical and Compliance Committee of the WCPFC (TCC10 – Pohnpei, Sept. 2014) reviewed a request to consider a tiered-scoring system to better reflect the magnitude and severity of the implications of the lack of scientific data provisions, and directed the SPC to produce an outline of how this system might work. A paper by SPC on a proposed tier-scoring system was considered at WCPFC11 and the SPC was directed by WCPFC11 (Anon, 2014b) to consider this system for the data gaps paper prepared for SC11 (see Williams, 2015). Subsequent SC and TCC meetings (SC11, SC12, TCC11 and TCC12) noted the usefulness of the tier-scoring evaluation for the submission of scientific data and recommended this process continue, acknowledging there may be further refinements as required.

6. The ANNEX of this paper briefly outlines the methodology for undertaking the tier-scoring evaluation of the scientific data submissions by Cooperating Commission Members (CCMs), which has been included in the tables of this paper.

2. STATUS OF DATA GAPS

7. Data gaps and other issues related to the provision of data have been reported at each Scientific Committee meeting since the first in 2005 [the first data gaps paper for SC1 (Williams and Lawson, 2005) and the most recent data gaps paper for SC15 (Williams, 2019)].

8. The following sections describe the most important current gaps in the WCPFC scientific data holdings. The text in *blue italics* reflects the recent work and/or developments to resolve the respective data gaps.

2.1 Data gaps reported elsewhere

9. Readers are referred to previous versions of this paper for more detail on important categories of data gaps where there have not been any significant developments over the past year, or other papers that provide more detail on recent developments to address specific gaps. These sections will continue to be referenced in future versions of this paper when there are significant developments and until they are resolved. Please refer to the following categories of data gaps:

- **Major data gaps for key fleets** (Williams, 2014 – Section 2.1.4)
  - Chinese Taipei STLL fleet prior to 2004
- **Operational catch and effort data** (Williams, 2018 – Section 2.2), noting the need to continue the arrangement whereby the WCPFC scientific service providers have access to historical operational data (see OFP, 2015a and OFP, 2015b).
- **Coverage rates** (Williams, 2014 – Section 2.2)
- **Key shark species** (Williams, 2017 – Section 2.3)
- **Nationality of the catch** (Williams, 2014 and Williams, 2019 – Section 2.3 in both papers);
- **Aggregate catch and effort data** (Williams, 2014 – Section 2.6)
- **Species composition data for purse seiners** (Williams, 2014 – Section 2.8; Hampton & Williams, 2017; Peatman et al., 2017; Peatman et al., 2018; Peatman et al., 2019; Peatman et al., 2020)
- **Annual catch estimates by EEZ** (Williams, 2015 – Section 2.3)
- **Number of vessels in the aggregate data** (Williams, 2015 – Section 2.4)
- **Conversion factor data** (Williams, 2017; Williams & Smith, 2018; SPC-OFP, 2019, MacDonald et al., 2020)

10. Some historical gaps could be resolved with the application of resources to conduct data rescue projects, for example. However, there are also some historical gaps that cannot be resolved, but have been documented to explain those gaps in the context of the scientific work of the Commission.

2.2 Major data gaps for key fleets

2.2.1 Indonesia, Philippines and Vietnam tuna fishery data

11. Past versions of this paper have described the data gaps and summarized the annual work to resolve these gaps in these three countries under the West Pacific East Asia (WPEA[1]) projects administered by the WCPFC. During the past year, the WCPFC Secretariat and the SPC/OFP continued to work with their respective counterparts in these countries to improve the data available from their domestic fisheries, but acknowledging the challenges presented due to the COVID-19 restrictions to travel and convening physical meetings.

12. The main activities related to data collected in the **Philippines domestic fisheries** over the past year include:

- *The Thirteenth Philippines Annual Catch Estimates Review Workshop and the Eleventh National Stock Assessment Project (NSAP) data review workshops were conducted through a video conferencing platform (Zoom) during May 2020. These meetings were attended by important stakeholders with knowledge and information on the tuna fisheries in the Philippines (government, industry and NGOs), and ensure the continuity of the process to agree on 2019 annual catch estimates for their domestic fishery.*
- *The coverage of logbook and observer data collected for the component of the Philippines domestic purse seine fleet fishing in the High Seas Pocket #1 continued to be 100% for 2019 (as in previous years). E-Reported logbook data were again provided for this fishery covering 2019 activities.*
- *Redevelopment of the Philippines National Stock Assessment Project (NSAP) database system is currently underway as an important WPEA activity; this database holds comprehensive landings and port sampling data from their diverse domestic tuna fisheries.*

13. The **Philippines** have enhanced the monitoring of their complex and diverse domestic fisheries significantly over the past 5–10 years, with most of the important data gaps now resolved. However, areas that continue to need attention include:

i. Improving logsheet coverage for the purse seine vessels fishing in the Philippines EEZ;
ii. Consideration for establishing a logbook system for the large-fish handline fishery;
iii. More reliable estimates for the small-scale municipal gears;
iv. A better understanding of the extent of catches from the handline fisheries targeting large yellowfin tuna in some regions.

14. The main activities related to data collected in the **Indonesian domestic fisheries** over the past year include:

- *The Eleventh Tenth Indonesia/WCPFC Area Annual Catch Estimates Review Workshop (ITFACE-11) was conducted through a video conferencing platform (Zoom) from 16-17 July 2020. This meeting is critical to ensuring the continuity of the process to agree on 2019 annual catch estimates for their domestic fishery (acknowledging provisional estimates for 2019 were provided in April 2020).*
- *In April 2020, SPC/OFP conducted a remote annual audit of the port sampling data collected in Indonesia, focusing on 2019 data. This audit is usually conducted through a workshop, which was not possible due to COVID-19 travel restrictions. The audit of 2019 data showed no major issues and a continued increase in the amount of size data collected in the Indonesia tuna fisheries.*

15. The most important gaps and areas for further attention with catch estimates and data within **Indonesia** include:

[1] The current WPEA-Improved Tuna Monitoring (WPEA-ITM) Project is scheduled to operate until March 2022 through a grant from the New Zealand Ministry of Foreign Affairs and Trade. This new WPEA project provides support principally to Indonesia and Vietnam, since the Philippines government is now supporting the tuna fisheries monitoring, workshops and other activities that had been supported in the Philippines through previous WPEA projects.

i. The need for more comprehensive review and consolidation of data from all potential sources in the catch estimation process (including industry and NGO data) which would help, *inter alia*, explain the trends in catches by gear;
ii. Compilation and submission of available aggregate and operational catch/effort data for recent years since the logbooks became mandatory in the Indonesian domestic tuna fisheries (2011-2019), although this is acknowledged as a long term goal with assistance provided through the WPEA projects;
iii. Submission of observer data which covers the ROP data field requirements.

16. The main activities related to data collected in the **Vietnam domestic fisheries** over the past year include:

- *An observer training workshop was conducted in late 2019 and six observer trips on gillnet vessels were conducted in the following months. An observer programme planning workshop and further observer training workshops are planned for the coming year, pending an easing of the COVID-19 travel restrictions. These workshops will ensure observer trips can produce information consistent with WCPFC Regional Observer Programme (ROP) data fields in the future.*
- *A tuna fishery data collection workshop was held in Nha Trang on the 10–11 July 2020 to ensure the provincial fisheries authorities and other relevant stakeholders are aware of the revised data collection forms which now adhere to the WCPFC data requirements.*
- *SPC/OFP installed the latest version of Tufman2 database system in Vietnam in late 2019 and conducted a training workshop in Nha Trang. This system supports the Vietnamese language and will be used to entry, manage and report logbook, port sampling, landings and observer data collected from the Vietnam tuna fisheries which adhere to the WCPFC data requirements.*

17. Significant progress has been made in a short period but there remain several challenges for **Vietnam** in the monitoring and data management areas, including:

i. the continuation of the good progress with the coverage of logbook, landings and port sampling data collection for their longline, purse seine and gillnet fisheries;
ii. the establishment of a sustainable observer programme.

2.3 SC15 recommendations

18. The SC15 agenda item on data gaps provided five (5) recommendations that are responded to below.

1. **SC15 requested that SPC provide an update to TCC on issues raised in SC15-2019-ST WP01.**

   A revised version of the SC15 data gaps paper (WCPFC-TCC15-2019-IP03) was made available to TCC15 for review and discussion.

2. **SC15 recommended that the charter notification issues raised in SC15-2019-ST WP01 are taken into account in the review leading to the new/replacement Charter Notification CMM. For example, when the coverage of operational data submitted is not 100% and chartered vessels for that flag state have been notified to the Commission, then the flag state shall submit a list of vessels representing the catches compiled for their annual catch estimates and aggregate catch/effort data (with these data submissions).**

   To be considered when the new/replacement Charter Notification is discussed.

3. **SC15 recommended that the WCPFC Science Service Provider (SSP) make the following enhancements to the tables on Longline observer coverage in the Regional Observer Programme (ROP) data management paper (SC15-2019-ST IP02) in the future:**
   - **i. Separate out the observer coverage of domestic CCM fleets active in their home EEZ (non-ROP coverage) from the observer coverage of CCM fleets fishing outside their home EEZ (ROP coverage);**
   - **ii. List all longline observer coverage for each fleet based on HOOKS or SETS. This list will then provide estimates of total longline observer coverage for reference, and will not be used for compliance purposes.**
   - **iii. Include a column to describe the coverage of longline E-Monitoring data based on FISHING DAYS.**

   The current version of this paper prepared for SC16 (**SC16-2020-ST IP-02**) provides tables that respond to each of the items in this recommendation.

4. **SC15 acknowledged the cannery data submissions (representing ~37% of the tropical WCPFC purse seine catch in recent years) to the WCPFC by International Seafood Sustainability Foundation (ISSF) participating companies, and the potential of cannery data for the work of the Commission, specifically Project 60. SC15 recommended that the WCPFC Science Service Provider (SSP) (with assistance from the WCPFC Secretariat) investigate what Commission mechanisms could be used and/or updated to facilitate the voluntary submission, and ensure an appropriate level of confidentiality, of cannery data from other processors for future Commission work (Project 60), and report the findings to SC16.**

   An information paper prepared for SC16 (**SC16-2020-ST IP-03** – Use of cannery data) includes sections that respond to this recommendation. Peatman et al. (2020) and Peatman (2020) also provide recommendations for the potential of cannery data for the work of the Commission.

5. **SC noted the recurrent difficulties of the WCPFC Science Service Provider to reconcile the discrepancies between number of trips and observers appointments in tables 1 and 2 of SC15-2019-ST IP02 and recommended that WCPFC SSP and WCPFC Secretariat investigate how these discrepancies could be addressed, in view to facilitating the work of SC and TCC.**

   After SC15, a focused effort involving national and sub-regional observer programmes was made to resolve the differences between the estimated purse seine trips determined from VMS data and the purse seine observer placements for 2018. This work resulted in identifying observer placements for 99% of the estimated purse seine trips in 2018 (2,300 placements on an estimated 2,335 observer trips). Work is continuing to bridge the same gap for 2019 observer data, and the relevant information is presented in **SC16-2020-ST IP-02.**

3. RECENT PROVISIONS OF SCIENTIFIC DATA TO THE WCPFC

19. 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 "7. Time periods covered and schedule for the provision of data" at https://www.wcpfc.int/system/files/Att%20G_Revised%20SciData%20decision.pdf).

20. As noted in the introduction, the tables of data submission presented herein include a column with a "tier-scoring evaluation score" which will be referred to under the WCPFC compliance monitoring process and reviewed at TCC16 (September 2020).

3.1 Annual Catch Estimates

21. Tables 1 and 2 list the dates on which catch estimates for 2017 and 2018, respectively, were provided, and include notes on the data that have been provided, mainly highlighting gaps or problems in those data (4th column), general notes on the data provided (5th column), and an indicator for the tier-scoring evaluation level (6th column).

22. All CCMs provided annual catch estimates for 2018 and 2019, by the respective deadlines (30 April 2019 and 30 April 2020). Indonesia, Philippines and Vietnam typically schedule their annual catch estimates review workshops after the submission deadline but prepared and submitted provisional 2019 estimates from these countries prior to the 30th April deadline this year. Revisions to annual catch estimates were also received from other CCMs prior to July 2020, and we expect further revisions to be included in the WCFPC Part 1 Annual Reports.

23. The quality of estimates provided continues to improve with further reduction in the number of data-gap notes.

3.2 Aggregate Catch/Effort data

24. Tables 3 and 4 list the dates on which aggregated catch and effort data were provided for 2018 and 2019, 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, general notes on the data are provided in the 5th column (these notes are not data gap issues but are informative) and an indicator for the tier-scoring evaluation level in the 6th column.

25. 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 before the deadline (30 April 2020).

26. Notable issues in aggregate catch/effort data where progress has been made in recent years have been described in previous versions of this paper, including the continued improvement with the inclusion of key shark species catches in the aggregate data submissions.

27. The main gaps in the provision of 2019 aggregate catch/effort data to date are

i. the absence of key shark species catch in the Indonesia and Vietnamese data,
ii. the low coverage of operational data available to generate aggregate data for the Vietnam and Indonesia fleets, and
iii. the anticipated under-reporting of key shark species in general.

28. The timeliness of the provision of aggregate catch/effort data has been maintained from recent years with all other CCMs providing 2019 data by the deadline of 30th April 2020.

3.3 Operational catch/effort data

29. Tables 5 and 6 show the schedule for the submissions of 2018 and 2019 operational catch and effort data to the WCFPC, respectively. The difficulties in implementing logbook programs for small-scale fisheries is acknowledged and indicated in these tables. The gaps in the 2019 data submissions include:

- The low coverage in the data provided for the Indonesian and Vietnam fleets
- The non-provision of a number of required fields in the Indonesia and Vietnam operational data, for example, the catch in number for longline and handline fisheries. Vietnam used a national logbook during 2019 which did not include several required fields but are in the process of addressing these gaps.
- Catches of key shark species are not included in the Indonesian and Vietnam fleet data

30. Most of the significant gaps in operational data have been resolved in recent years, as noted in Section 2.2 of Williams (2018). The coverage of operational data for some fleets is not complete (100%), although there was some improvement in coverage compared to the 2018 data.

31. The provision of **historical** operational data for the Asian tuna fleets (China, Indonesia, Japan, Korea and Chinese Taipei) remain the main data gaps for the WCPFC and it is hoped that these data can be provided in the near future. As reported in previous years, nearly all CCMs have now modified data collection systems and are including a breakdown of the catch (and where relevant, the release) of the key shark species in their operational data submissions.

3.4 Size data

32. Table 7 shows the schedule for the submissions of 2019 size data to the WCFPC. 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, general notes on the data are provided in the 5th column (these notes are not data gap issues but are informative), and an indicator for the tier-scoring evaluation level in the 6th column. The only gaps in the provision of 2019 size data are for two of the Vietnam tuna fisheries and the US albacore troll fleet but noting that provision of size data is non-binding.

3.5 Overall scientific data submission evaluation

33. Table 8 provides an overall evaluation of each CCM's submission of scientific data to the WCPFC by consolidating the tier-scoring evaluations for each data type (see ANNEX for further information), as requested by TCC11:

> ***Para. 388. TCC11 recommends that WCPFC12 tasks SPC to further refine the tier scoring system to provide, among other things, an indicator of compliance of CCMs as a whole with provision of scientific data.***

34. For the submission of 2019 data, 32 of the 34 CCMs/entities (94%) were evaluated as completely satisfying (100%) the **binding** requirements for the provision of scientific data to the WCPFC. The two (2) CCMs that did not achieve 100% (for 2019 data submissions) were at least at 80% or greater, noting that some of these data gaps may be resolved before TCC16. The resolution of one CCM's data gap for 2018 now means that 94% of CCMs/entities have also satisfied (100%) the **binding** requirements for 2018 data submissions.

3.6 Regional Observer Programme (ROP) data

35. The SPC/OFP has been processing observer data on behalf of their member countries for more than 20 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., 2012).

36. Williams et al. (2020) describes the recent developments, future work and initiatives with respect to ROP data management. This paper also includes

i. Tables summarizing current coverage of available observer data by gear;
ii. Tables summarizing observer data by Pacific Island observer providers;
iii. Tables summarizing data generated from E-Monitoring trials that have been provided to the Science Service provider.

4. RECENT DEVELOPMENTS IN DISSEMINATION OF DATA

4.1 Bycatch Data Exchange Protocol (BDEP)

37. The most recent update of BDEP data (up to 2019 inclusive) are now available at "Public Domain Bycatch Data" – https://www.wcpfc.int/node/29966, and the latest developments with regards to BDEP over recent years are described in Fitzsimmons et al. (2018) and Fitzsimmons et al. (2019).

38. Recent versions of the BDEP data include the following enhancements:

- A breakdown of the seabird interaction to the species level (Task 6 of the BDEP Work Plan; Fitzsimmons et al., 2018), and progressed through work under WCPFC Project 68 (Peatman and Smith, 2019);
- The inclusion of marine mammal interactions to the species level (Task 7 of the BDEP work plan; Fitzsimmons et al., 2018).

4.2 Annual catch estimates (ACE) tables

39. At the WCPFC16 in Port Moresby, Papua New Guinea (December 2020), the Commission (in adopting the TCC15 Summary Report) tasked the Secretariat and Scientific Services Provider to trial the publishing of Annual Catch Estimates (ACE) tables on the WCPFC web site in 2020. The ACE tables would correspond to the "Essential Annual Fisheries Information" Tables I – IV and Tabular Annual Fisheries Information Tables 1–5 and Figures 1–3 from Annual Report Part 1, that are based on the April 30 scientific data submissions.

40. The trial was approved in 2020 and the provisional ACE Tables were subsequently generated and published on the WCPFC web site at https://www.wcpfc.int/ace-by-fleet for CCM review. A survey was issued by the WCPFC Secretariat in late May for CCMs to comment on, *inter alia*[2], the appropriateness of the ACE Tables to address the streamlining of the Annual Report Part 1. An SC16 paper (WCPFC Secretariat and SPC – SC16-2020 GN IP-07) includes a summary of CCM comments on the ACE Tables and proposed future work on the ACE Tables in response to those comments.

[2] The survey also posed questions related to the online tool for the Annual Report Part 2

REFERENCES

Anonymous. 2005a. Report of the First Regular Session of the Scientific Committee of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, Noumea, New Caledonia, 8–19 August 2005. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2005b. Summary Record of the Second Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, Pohnpei, Federated States of Micronesia, 12–16 December 2005. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2007. Report of the Third Regular Session of the Scientific Committee of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 13–24 August 2007, Honolulu, Hawaii, USA. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2009. Report of the Sixth Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 7–11 December 2009, Papeete, French Polynesia. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2010. Report of the Seventh Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 7–11 December 2010, Honolulu, Hawaii, USA. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2012. Report of the Ninth Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 2–6 December 2012, Manila, Philippines. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2013. Report of the Tenth Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 2–6 December 2013, Cairns, Australia. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2014a. Report of the WCPFC Tenth Technical and Compliance Committee Meeting (TCC10). September 2014, Pohnpei, FSM. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2014b. Report of the Eleventh Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 3–7 December 2013, Apia, Samoa. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2015. Report of the WCPFC Eleventh Scientific Committee Meeting (SC11). August 2015, Pohnpei, FSM. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Anonymous. 2016. Report of the Thirteenth Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 5–9 December 2016, Denarau Island, Fiji. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Fitzsimmons, L., S. Caillot, & N. Smith. 2018. Ongoing development of the Bycatch Management Information System (BMIS) and future work including integrating regional bycatch data summaries. SC14 EB-IP-10. Fourteenth Regular Session of the Scientific Committee of the WCPFC (SC14). Busan, Republic of Korea. 8–16 August 2018.

Fitzsimmons, L., Smith, N. and S. Caillot. 2019. Bycatch Management Information System (BMIS): developments in the final ABNJ period, and future BMIS). SC15 EB-IP-01. Fifteenth Regular Session of the Scientific Committee of the WCPFC (SC15). Pohnpei, FSM. 12–20 August 2019.

Hampton and Williams, 2017. Annual estimates of purse seine catches by species based on alternative data sources. SC13 ST-IP-03. Thirteenth Regular Session of the Scientific Committee of the WCPFC (SC13). Rarotonga, Cook Islands. 9–17 August 2017.

Lewis, A.D. 2005. The Tuna Fisheries of Vietnam — An Overview of Available Information. Information Paper ST IP-5. First Meeting of the Scientific Committee of the Western and Central Pacific Fisheries Commission, 8–19 August 2005, Noumea, New Caledonia. Oceanic Fisheries Programme, Secretariat of the Pacific Community, Noumea, New Caledonia.

Macdonald, J., P. Williams, C. Sanchez, E. Schneiter, M. Ghergariu, M. Hosken, A. Panizza, T. Park. 2020. Project 90 update: Better data on fish weights and lengths for scientific analyses ST IP–06. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC16). Online Meeting. 11–20 August 2020.

OFP (2015a). Report of the Workshop on Operational Longline Data. WCPFC-SC11-2015/SA-IP-02. Eleventh Regular Session of the Scientific Committee of the WCPFC. Pohnpei, FSM. 5–13 August 2015.

OFP (2015b). Continued use of longline operational-level data provided by fishing nations to support WCPFC stock assessments. WCPFC-SC11-2015/SA WP-07. Eleventh Regular Session of the Scientific Committee of the WCPFC. Pohnpei, FSM. 5–13 August 2015.

Peatman, T., N. Smith, T. Park and S. Caillot. 2017. Better purse seine catch composition estimates: recent progress and future work plan for Project 60. SC13 ST-WP-02. Thirteenth Regular Session of the Scientific Committee of the WCPFC (SC13). Rarotonga, Cook Islands. 9–17 August 2017.

Peatman, T., N. Smith, T. Park and S. Caillot. 2018. Better purse seine catch composition estimates: recent progress and future work plan for Project 60. SC14 ST-WP-02. Fourteenth Regular Session of the Scientific Committee of the WCPFC (SC14). Busan, Republic of Korea. 8–16 August 2018.

Peatman, T., and N. Smith. 2019. Development of WCPFC seabird bycatch estimates (Project 68). SC15 EB-WP-03. Fifteenth Regular Session of the Scientific Committee of the WCPFC (SC15). Pohnpei, FSM. 12–20 August 2019.

Peatman, T., P. Williams and S. Nicol. 2020. Better purse seine catch composition estimates: recent progress and future work plan for Project 60. SC16 ST-IP-04. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC15). Online Meeting. 11–20 August 2020.

Peatman, T. 2020. USA purse seine catch composition. SC16 ST-IP-05. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC15). Online Meeting. 11–20 August 2020.

SPC-OFP. 2019. Size data for scientific analysis (Project 90). SC15 ST-WP-03. Fifteenth Regular Session of the Scientific Committee of the WCPFC (SC15). Pohnpei, FSM. 12–20 August 2019.

WCPFC Secretariat and SPC. 2020. An update on streamlining the annual reporting of the Commission. Information Paper GN IP–07. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC16). Online Meeting. 11–20 August 2020.

Williams, P.G. & T.A. Lawson. 2005. A summary of aggregate catch/effort and size composition data available to the WCPFC Scientific Committee, highlighting the main data gaps. Information Paper ST IP–2. First Regular Session of the WCPFC Scientific Committee (SC1), 8–19 August 2005, Noumea, New Caledonia.

Williams, P.G. 2014. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC10 ST WP–1. Tenth Regular Session of the WCPFC Scientific Committee (SC10), Majuro, Republic of the Marshall Islands. 6–15 August 2014.

Williams, P.G. 2015. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC11 ST WP–1. Eleventh Regular Session of the WCPFC Scientific Committee (SC11), Pohnpei, Federated States of Micronesia. 6–15 August 2015.

Williams, P.G. 2016. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC12 ST WP–1. Twelfth Regular Session of the WCPFC Scientific Committee (SC12). Bali, Indonesia, FSM. 3–11 August 2016.

Williams, P.G. 2017. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC13 ST WP–1. Thirteenth Regular Session of the WCPFC Scientific Committee (SC13). Rarotonga, Cook Islands, FSM. 9–17 August 2017.

Williams, P.G. 2018. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC14 ST WP–1. Fourteenth Regular Session of the WCPFC Scientific Committee (SC14). Busan, Republic of Korea. 8–16 August 2018.

Williams, P.G. 2019. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC14 ST WP–1. Fifteenth Regular Session of the Scientific Committee of the WCPFC (SC15). Pohnpei, FSM. 12–20 August 2019.

Williams, P.G, N. Smith, & E. Schneiter. 2017. Bycatch Data Exchange Protocol (BDEP) – Summary tables. SC13 EB-IP-05. Thirteenth Regular Session of the Scientific Committee of the WCPFC (SC13). Rarotonga, Cook Islands. 9–17 August 2017.

Williams, P.G., A. Panizza, C. Falasi, E. Loganimoce. 2020. Status of ROP data management. Information Paper ST IP–02. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC16). Online Meeting. 11–20 August 2020.

TABLES

Table 1. Provision of 2018 annual catches estimates to the WCPFC

COUNTRY / TERRITORY / ENTITY	GEAR(s)	Date submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL
Australia	LL, PS, PL, HL,TR	30 Apr 2019		G, H	III
Canada	TR	30 Apr 2019			III
China	LL, PS	29 Apr 2019			III
Cook Islands	LL, TR	12 Apr 2019		G, H	III
Ecuador	PS	30 Apr 2019			III
El Salvador	PS	30 Apr 2019			III
European Union	LL, PS	29 Apr 2019			III
Federated States of Micronesia	LL, PS	12 Apr 2019		G, H	III
Fiji Islands	LL, PL	12 Apr 2019		G, H	III
French Polynesia	LL, PL, OT	12 Apr 2019		G, H	III
Indonesia	LL	12 Apr 2019		F	III
	PS, PL, HL, TR, OT	12 Apr 2019		F, J	III
Japan	PS, LL	23 Apr 2019		F, C	III
	PL, TR, OT	23 Apr 2019		F	III
Kiribati	LL, PS, OT	12 Apr 2019		G, H	III
Republic of Korea	LL, PS	30 Apr 2019		H	III
Marshall Islands	LL, PS	12 Apr 2019		G, H	III
Nauru	PS	12 Apr 2019		G, H	III
New Caledonia	LL	25 Apr 2019		G, H	III
New Zealand	LL, PS, TR, PL	30 Apr 2019		G, H	III
Niue	LL	12 Apr 2019		D	III
Palau	LL, PL	12 Apr 2019		G, H	III
Papua New Guinea	LL, PS	12 Apr 2019		G, H	III
Philippines	PS	12 Apr 2019		F, G, H	III
	LL	12 Apr 2019		D	III
	HL, RN, OT	12 Apr 2019		F, J	III
Samoa	LL	12 Apr 2019		G, H	III
Solomon Islands	LL	12 Apr 2019		G, H	III
	PS, PL	12 Apr 2019		H	III
Chinese Taipei	LL, PS	30 Apr 2019			III
Tokelau	OT	12 Apr 2019			III
Tonga	LL	12 Apr 2019		G, H	III
Tuvalu	LL, PS, OT	12 Apr 2019		G, H	III
United States	LL, PS, TR, HL, PL	26 Apr 2019		G, H	III
Vanuatu	LL, PS	12 Apr 2019		G, H	III
Vietnam	LL/HL, GN, PS	29 Apr 2019		F, L	III
Wallis and Futuna	LL	30 Apr 2019		D	III

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 SHOULD BE provided (non-binding)
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 SC14.
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 (except for protected species).
K	Estimates of DISCARDs SHOULD be provided (non-binding)
L	Breakdown of vessels by GRT not provided but brekdown by HP provided and an understanding that most vessels are < 50 GRT

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the data provided and the coverage of data is according to the requirements.

Table 2. Provision of 2019 annual catches estimates to the WCPFC

COUNTRY / TERRITORY / ENTITY	GEAR(s)	Date submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL
Australia	LL, PS, PL, HL,TR	30 Apr 2020		G, H	III
Canada	TR	28 Apr 2020			III
China	LL, PS	30 Apr 2020			III
Cook Islands	LL, PS, TR	07 Apr 2020		G, H	III
Ecuador	PS	28 Apr 2020			III
El Salvador	PS	30 Apr 2020			III
European Union	LL, PS	30 Apr 2020			III
Federated States of Micronesia	LL, PS	07 Apr 2020		G, H	III
Fiji Islands	LL, PL	07 Apr 2020		G, H	III
French Polynesia	LL, PL, OT	07 Apr 2020		G, H	III
Indonesia	LL	29 Apr 2020		F	III
	PS, PL, HL, TR, OT	29 Apr 2020		F, J	III
Japan	PS, LL	21 Apr 2020		F, C	III
	PL, TR, OT	21 Apr 2020		F	III
Kiribati	LL, PS, OT	07 Apr 2020		G, H	III
Republic of Korea	LL, PS	30 Apr 2020		H	III
Marshall Islands	LL, PS	07 Apr 2020		G, H	III
Nauru	PS	07 Apr 2020		G, H	III
New Caledonia	LL	07 Apr 2020		G, H	III
New Zealand	LL, PS, TR, PL	30 Apr 2020		G, H	III
Niue	LL	07 Apr 2020		D	III
Palau	LL, PL	07 Apr 2020		G, H	III
Papua New Guinea	LL, PS	07 Apr 2020		G, H	III
Philippines	PS	07 Apr 2020		F, G, H	III
	LL	07 Apr 2020		D	III
	HL, RN, OT	07 Apr 2020		F, J	III
Samoa	LL	07 Apr 2020		G, H	III
Solomon Islands	LL	07 Apr 2020		G, H	III
	PS, PL	07 Apr 2020		H	III
Chinese Taipei	LL, PS	30 Apr 2020			III
Tokelau	OT	07 Apr 2020			III
Tonga	LL	07 Apr 2020		G, H	III
Tuvalu	LL, PS, OT	07 Apr 2020		G, H	III
United States	LL, PS, TR, HL, PL	28 Apr 2020		G, H	III
Vanuatu	LL, PS	07 Apr 2020		G, H	III
Vietnam	LL/HL, GN, PS	29 Apr 2020		F, L	III
Wallis and Futuna	LL	29 Apr 2020		D	III

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 SHOULD BE provided (non-binding)
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 this year's SC meeting.
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 (except for protected species).
K	Estimates of DISCARDs SHOULD be provided (non-binding)
L	Breakdown of vessels by GRT not provided but brekdown by HP provided and an understanding that most vessels are < 50 GRT

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the data provided and the coverage of data is according to the requirements.

Table 3. Provision of 2018 Aggregated catch and effort data to the WCPFC

COUNTRY / ENTITY	GEAR TYPE	Date Submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL
Australia	LL, PL, PS, TR	30 Apr 2019		C,I	III
Canada	TR	30 Apr 2019			III
China	LL (DWFN)	29 Apr 2019		P	III
	PS	29 Apr 2019		P	III
Cook Islands	LL, TR	12 Apr 2019		J, O	III
Ecuador	PS	30 Apr 2019		C	III
El Salvador	PS	30 Apr 2019		C	III
European Union	LL	29 Apr 2019		C, F, P, R	III
	PS	29 Apr 2019		C	III
Federated States of Micronesia	LL, PS	12 Apr 2019		J, O	III
Fiji Islands	LL, PL	12 Apr 2019		J, O	III
French Polynesia	LL	12 Apr 2019		J, O	III
Indonesia	LL, PS, PL	12 Apr 2019	18	Q, O, S, T	II (50%)
	HL, TR, GN, OT	12 Apr 2019		N, Q	III
Japan	LL	23 Apr 2019		A, F,H, I, L, R	III
	PL	23 Apr 2019		L	III
	PS	23 Apr 2019		L	III
Kiribati	LL, PS	12 Apr 2019		J, O	III
Marshall Islands	LL, PS	12 Apr 2019		J, O	III
Nauru	PS	12 Apr 2019		J, O	III
New Caledonia	LL	12 Apr 2019		J, O	III
New Zealand	LL, PL, HL, PS	30 Apr 2019		C,I	III
Niue	LL	12 Apr 2019		E	III
Palau	LL, PL	12 Apr 2019		J, O	III
Papua New Guinea	LL, PS	12 Apr 2019		J, O	III
Philippines	PS	12 Apr 2019		M, Q	III
	LL	12 Apr 2019		E	III
	HL, RN, OT	12 Apr 2019		M, N, Q, T	III
Republic of Korea	LL	30 Apr 2019		P	III
	PS	30 Apr 2019		P	III
Samoa	LL	12 Apr 2019		J, O	III
Solomon Islands	LL	12 Apr 2019		J, O	III
	PL, PS	12 Apr 2019		J	III
Chinese Taipei	LL (DWFN)	30 Apr 2019		H, I, L	III
	LL (small)	30 Apr 2019		H, I, L	III
	PS	30 Apr 2019		L	III
Tonga	LL	12 Apr 2019		J, O	III
Tuvalu	LL, PS	12 Apr 2019		J, O	III
United States	LL (American Samoa)	26 Apr 2019		B, I	III
	LL (Hawaii)	26 Apr 2019		B, I	III
	PS (Treaty)	26 Apr 2019		J	III
	TR	26 Apr 2019		B	III
Vanuatu	LL, PS	12 Apr 2019		J, O	III
Vietnam	LL/HL	29 Apr 2019	18	M, Q, S, T	II (95%)
	PS, GN	29 Apr 2019	18	M, Q, S, T	II (92%)
Wallis and Futuna	LL	30 Apr 2019		E, O	III

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 yellowfin-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 MAY ALSO be provided (non-binding)
23 Catches of KEY shark species have not been provided.
24 Effort in SETS by SET TYPE not provided for PURSE SEINE data

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."
O Logsheet forms used by this fleet cover the collection of each of the KEY SHARK species and these logsheet data have been aggregated and provided to the WCPFC.
P OPERATIONAL catch/effort data also provided and satisfies the requirements stipulated under AGGREGATE data.
Q Flag State advised that there is full retention in their fishery (except for protected species which must be released), so no DISCARDS
R Aggregate Catch/Effort data for ALBACORE, SWORDFISH and STRIPED MARLIN for the south Pacific Ocean east of the WCPFC Area MAY ALSO be provided (non-binding)
S Coverage of data provided is less than 50% (non-binding)
T Aggregate data not provided, but can be estimated from Operational data submitted to the WCPFC and landings data collected under the WPEA project.

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the data provided and the coverage of data is according to the requirements.

Table 4. Provision of 2019 Aggregated catch and effort data to the WCPFC

COUNTRY / ENTITY	GEAR TYPE	Date Submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL
Australia	LL, PL, PS, TR	30 Apr 2020		C,I	III
Canada	TR	28 Apr 2020			III
China	LL (DWFN)	30 Apr 2020		P	III
	PS	30 Apr 2020		P	III
Cook Islands	LL, PS, TR	07 Apr 2020		J, O	III
Ecuador	PS	28 Apr 2020		C	III
El Salvador	PS	30 Apr 2020		C	III
European Union	LL	30 Apr 2020		C, F, P, R	III
	PS	30 Apr 2020		C	III
Federated States of Micronesia	LL, PS	07 Apr 2020		J, O	III
Fiji Islands	LL, PL	07 Apr 2020		J, O	III
French Polynesia	LL	07 Apr 2020		J, O	III
Indonesia	LL, PS, PL	29 Apr 2020	18	Q, O, S, T	II (50%)
	HL, TR, GN, OT	29 Apr 2020		N, Q	III
Japan	LL	21 Apr 2020		A, F,H, I, L, R	III
	PL	21 Apr 2020		L	III
	PS	21 Apr 2020		L	III
Kiribati	LL, PS	07 Apr 2020		J, O	III
Marshall Islands	LL, PS	07 Apr 2020		J, O	III
Nauru	PS	07 Apr 2020		J, O	III
New Caledonia	LL	07 Apr 2020		J, O	III
New Zealand	LL, PL, HL, PS	30 Apr 2020		C,I	III
Niue	LL	07 Apr 2020		E	III
Palau	LL, PL	07 Apr 2020		J, O	III
Papua New Guinea	LL, PS	07 Apr 2020		J, O	III
Philippines	PS	07 Apr 2020		M, Q	III
	LL	07 Apr 2020		E	III
	HL, RN, OT	07 Apr 2020		M, N, Q, T	III
Republic of Korea	LL	30 Apr 2020		P	III
	PS	30 Apr 2020		P	III
Samoa	LL	07 Apr 2020		J, O	III
Solomon Islands	LL	07 Apr 2020		J, O	III
	PL, PS	07 Apr 2020		J	III
Chinese Taipei	LL (DWFN)	30 Apr 2020		H, I, L	III
	LL (small)	30 Apr 2020		H, I, L	III
	PS	30 Apr 2020		L	III
Tonga	LL	07 Apr 2020		J, O	III
Tuvalu	LL, PS	07 Apr 2020		J, O	III
United States	LL (American Samoa)	28 Apr 2020		B, I	III
	LL (Hawaii)	28 Apr 2020		B, I	III
	PS (Treaty)	28 Apr 2020		J	III
	TR	28 Apr 2020		B	III
Vanuatu	LL, PS	07 Apr 2020		J, O	III
Vietnam	LL/HL	29 Apr 2020	18	M, Q, S, T	II (95%)
	PS, GN	29 Apr 2020	18	M, Q, S, T	II (92%)
Wallis and Futuna	LL	29 Apr 2020		E, O	III

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 yellowfin-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 MAY ALSO be provided (non-binding)
23	Catches of KEY shark species have not been provided.
24	Effort in SETS by SET TYPE not provided for PURSE SEINE data

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."
O	Logsheet forms used by this fleet cover the collection of each of the KEY SHARK species and these logsheet data have been aggregated and provided to the WCPFC.
P	OPERATIONAL catch/effort data also provided and satisfies the requirements stipulated under AGGREGATE data.
Q	Flag State advised that there is full retention in their fishery (except for protected species which must be released), so no DISCARDS
R	Aggregate Catch/Effort data for ALBACORE, SWORDFISH and STRIPED MARLIN for the south Pacific Ocean east of the WCPFC Area MAY ALSO be provided (non-binding)
S	Coverage of data provided is less than 50% (non-binding)
T	Aggregate data not provided, but can be estimated from Operational data submitted to the WCPFC and landings data collected under the WPEA project.

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the data provided and the coverage of data is according to the requirements.

Table 5. Provision of 2018 Operational catch and effort data to the WCPFC

					TIER-SCORING EVALUATION LEVEL	
FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES	KEY ATTRIBUTES	COVERAGE
Australia	LL, PL, PS, TR	30 Apr 2019		E	III	100%
Canada	TR	30 Apr 2019			III	100%
China	LL	29 Apr 2019	11	I	III	64% *
	PS	29 Apr 2019			III	100%
Cook Islands	LL	12 Apr 2019		C, J	III	100%
Ecuador	PS	30 Apr 2019		F	III	100%
El Salvador	PS	30 Apr 2019			III	100%
European Union	LL	29 Apr 2019		E	III	100%
	PS				III	100%
Federated States of Micronesia	LL	12 Apr 2019	11	C, J, F	III	64% *
	PS			C, J	III	100%
Fiji Islands	LL, PL	12 Apr 2019		C, J	III	100%
French Polynesia	LL	12 Apr 2019		C, J, F	III	100%
	OT	12 Sep 2019		G, L	III	#
Indonesia	LL, PS, PL	12 Apr 2019	1,2,4,5,6,9,10	K	II (72%)	< 5%
	HL, TR, GN, OT			G, K	III	#
Japan	PS, PL	26 Apr 2019		E, M	III	100%
	LL	26 Apr 2019	11	E, M	III	96% *
Kiribati	LL	12 Apr 2019	11	C, J, F	III	61% *
	PS			C, J, F	III	100%
Republic of Korea	LL, PS	30 Apr 2019		E	III	100%
Marshall Islands	LL	12 Apr 2019		C, J	III	100%
	PS			C, J	III	100%
Nauru	PS	12 Apr 2019		C, J	III	100%
New Caledonia	LL	12 Apr 2019		C, J	III	100%
New Zealand	LL	30 Apr 2019		E, F	III	100%
	PL, TR, PS			E	III	100%
Niue	LL	12 Apr 2019		A	III	N/A
Palau	LL	12 Apr 2019	11	C, J	III	72% *
Papua New Guinea	LL	12 Apr 2019	11	C, J, F	III	89% *
	PS		11	C, J, F	III	80% *
Philippines	PS	12 Apr 2019	11	J, K	III	70% *
	LL	12 Apr 2019		A	III	N/A
	HL, RN, OT			G, K	III	#
Samoa	LL	12 Apr 2019		C, J	III	100%
Solomon Islands	LL	12 Apr 2019	11	C, J	III	80% *
	PS		11	C, J, F	III	94% *
	PL		11	C, J	III	72% *
Chinese Taipei	LL	30 Apr 2019	11	E, F	III	85% *
	PS	30 Apr 2019		F	III	100%
Tonga	LL	12 Apr 2019		C, J	III	100%
Tuvalu	LL, PS	12 Apr 2019		C, J	III	100%
United States	LL (American Samoa)	26 Apr 2019	11	E, F	III	88% *
	LL (CNMI, GUAM)	26 Apr 2019		E	III	100%
	LL (Hawaii)	26 Apr 2019		E	III	100%
	PL, HL, TR (trop)			G	III	#
	PS	26 Apr 2019		B	III	100%
	TR (ALB)	26 Apr 2019			III	100%
Vanuatu	LL	12 Apr 2019	11	C, J, F	III	87% *
	PS	12 Apr 2019		C, J	III	100%
Vietnam	LL/HL	29 Apr 2019	6, 8, 10	G, H, K, F, N	II (85%)	35%
	PS, GN	29 Apr 2019	6, 8	G, H, K, F, N	II (75%)	< 20%
Wallis and Futuna	LL	30 Apr 2019		A	III	N/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 < 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.
11	Coverage of data data provided is > 50% but < 100%

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 KEY shark species have been provided
F	Coverage of operational data is not 100%, but Annual Catch and Effort estimates by areas of national jurisdiction (EEZs) and High Seas ARE AVAILABLE.
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.
I	Operational Logsheet data also provided to SPC by their member countries which are coastal states where this FLAG STATE fleet is based
J	Logsheet forms used by this fleet cover the collection of each of the KEY SHARK species.
K	Flag State advised that there is full retention in their fishery, so no DISCARDS.
L	Represents a range of French Polynesia small-scale, artisanal gears taking tuna with a range of fishing methods. Vessels include the poti marara and bonitier fleets.
M	Operational data provided to the WCPFC for the WCPFC Area south of 20°N and aggregate 1°x1° year/month data provided for WCPFC Area north of 20°N

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the (minimum standard) data fields provided and the coverage of data is sufficient to be used for undertaking the scientific work of the Commission.

COVERAGE

Coverage has been determined from VMS trip coverage where possible. Where VMS data are incomplete or not available, coverage has been deteremined in some cases by comparing the total target tuna catch from operational data for that gear to the total target tuna catch from ANNUAL CATCH ESTIMATES.

*	Instances where coverage of operational data is less than 100%, but annual catch/effort estimates by geographic area have been made available and together with the operational level catch and effort data that has been submitted, is sufficient to allow the scientific work of the Commission to be undertaken
#	"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 6. Provision of 2019 Operational catch and effort data to the WCPFC

					TIER-SCORING EVALUATION LEVEL	
FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES	KEY ATTRIBUTES	COVERAGE
Australia	LL, PL, PS, TR	30 Apr 2020		E	III	100%
Canada	TR	28 Apr 2020			III	100%
China	LL	30 Apr 2020	6, 11	I	III	45% *
	PS	30 Apr 2020			III	100%
Cook Islands	LL, PS	07 Apr 2020	11	C, J	III	86% *
Ecuador	PS	28 Apr 2020		F	III	100%
El Salvador	PS	30 Apr 2020			III	100%
European Union	LL	30 Apr 2020		E	III	100%
	PS				III	100%
Federated States of Micronesia	LL	07 Apr 2020	6, 11	C, J, F	III	32% *
	PS		11	C, J	III	63% *
Fiji Islands	LL, PL	07 Apr 2020		C, J	III	100%
French Polynesia	LL	07 Apr 2020		C, J, F	III	100%
	OT	07 Apr 2020		G, L	III	#
Indonesia	LL, PS, PL	29 Apr 2020	1,2,4,5,6,9,10	K	II (72%)	< 10%
	HL, TR, GN, OT			G, K	III	#
Japan	PS, PL	21 Apr 2020		E, M	III	100%
	LL	21 Apr 2020	11	E, M	III	96% *
Kiribati	LL	07 Apr 2020	11	C, J, F	III	61% *
	PS			C, J, F	III	100%
Republic of Korea	LL, PS	30 Apr 2020		E	III	100%
Marshall Islands	LL	07 Apr 2020		C, J	III	100%
	PS			C, J	III	100%
Nauru	PS	07 Apr 2020		C, J	III	100%
New Caledonia	LL	07 Apr 2020		C, J	III	100%
New Zealand	LL	30 Apr 2020		E, F	III	100%
	PL, TR, PS			E	III	100%
Niue	LL	07 Apr 2020		A	III	N/A
Palau	LL	07 Apr 2020	11	C, J	III	50% *
Papua New Guinea	LL	07 Apr 2020	6, 11	C, J, F	III	< 10% *
	PS		11	C, J, F	III	65% *
Philippines	PS	07 Apr 2020	11	J, K	III	70% *
	LL	07 Apr 2020		A	III	N/A
	HL, RN, OT			G, K	III	#
Samoa	LL	07 Apr 2020		C, J	III	100%
Solomon Islands	LL	07 Apr 2020	11	C, J	III	50% *
	PS		11	C, J, F	III	86% *
	PL		11	C, J	III	75% *
Chinese Taipei	LL	30 Apr 2020	11	E, F	III	100%
	PS	30 Apr 2020		F	III	100%
Tonga	LL	07 Apr 2020		C, J	III	100%
Tuvalu	LL, PS	07 Apr 2020		C, J	III	100%
United States	LL (American Samoa)	28 Apr 2020		E	III	100%
	LL (CNMI, GUAM)	28 Apr 2020		E	III	100%
	LL (Hawaii)	28 Apr 2020		E	III	100%
	PL, HL, TR (trop)			G	III	#
	PS	28 Apr 2020		B	III	100%
	TR (ALB)	28 Apr 2020			III	100%
Vanuatu	LL	07 Apr 2020	6, 11	C, J, F	III	47% *
	PS	07 Apr 2020	11	C, J, F	III	85% *
Vietnam	LL/HL	29 Apr 2020	6, 8	G, H, K, F, N	II (85%)	< 5%
	PS, GN	29 Apr 2020	6, 8	G, H, K, F, N	II (75%)	< 5%
Wallis and Futuna	LL	29 Apr 2020		A	III	N/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 < 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.
11	Coverage of data data provided is > 50% but < 100%

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 KEY shark species have been provided
F	Coverage of operational data is not 100%, but Annual Catch and Effort estimates by areas of national jurisdiction (EEZs) and High Seas ARE AVAILABLE.
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.
I	Operational Logsheet data also provided to SPC by their member countries which are coastal states where this FLAG STATE fleet is based
J	Logsheet forms used by this fleet cover the collection of each of the KEY SHARK species.
K	Flag State advised that there is full retention in their fishery, so no DISCARDS.
L	Represents a range of French Polynesia small-scale, artisanal gears taking tuna with a range of fishing methods. Vessels include the poti marara and bonitier fleets.
M	Operational data provided to the WCPFC for the WCPFC Area south of 20°N and aggregate 1°x1° year/month data provided for WCPFC Area north of 20°N
N	National logbook data provided, but does not completely satisfy the WCPFC operational data field requirements as yet.

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the (minimum standard) data fields provided and the coverage of data is sufficient to be used for undertaking the scientific work of the Commission.

COVERAGE

Coverage has been determined from VMS trip coverage where possible. Where VMS data are incomplete or not available, coverage has been deteremined in some cases by comparing the total target tuna catch from operational data for that gear to the total target tuna catch from ANNUAL CATCH ESTIMATES.

*	Instances where coverage of operational data is less than 100%, but annual catch/effort estimates by geographic area have been made available and together with the operational level catch and effort data that has been submitted, is sufficient to allow the scientific work of the Commission to be undertaken
#	"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 2019 Size data to the WCPFC

FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL
Australia	LL	30 Apr 2020		B, C	III
	PL, PS, TR			J	III
Canada	TR	28 Apr 2020		A	III
China	LL	30 Apr 2020		A, H	III
	PS	30 Apr 2020		A, H	III
Cook Islands	LL, PS	07 Apr 2020		A, H, K	III
Ecuador	PS	28 Apr 2020		H	III
El Salvador	PS	30 Apr 2020		H	III
European Union	LL	30 Apr 2020		L	III
	PS	30 Apr 2020		H	III
Federated States of Micronesia	LL, PS	07 Apr 2020		A, H, I, K	III
Fiji Islands	LL, PL	07 Apr 2020		A, H, K	III
French Polynesia	LL	07 Apr 2020		A, H, K	III
Indonesia	LL, PS, OT	25 Mar 2020		A, K	III
Japan	PS	21 Apr 2020		A, H	III
	LL, PL	21 Apr 2020		A, H, I	III
Kiribati	LL	07 Apr 2020		A, H, K	III
	PS	07 Apr 2020		A, H	III
Republic of Korea	LL, PS	30 Apr 2020		A, H	III
Marshall Islands	LL, PS	07 Apr 2020		A, H, K	III
Nauru	PS	07 Apr 2020		A, H, K	III
New Caledonia	LL	07 Apr 2020		A, H, K	III
New Zealand	LL, PL, PS, TR	30 Apr 2020		A, H	III
Niue	LL	07 Apr 2020		G	III
Palau	LL, PL	07 Apr 2020		A, H, K	III
Papua New Guinea	LL, PS	07 Apr 2020		A, H	III
Philippines	PS, HL, RN, OT	07 Apr 2020		A, H, K	III
	LL	07 Apr 2020		G	III
Samoa	LL	07 Apr 2020		A, H, K	III
Solomon Islands	LL, PS, PL	07 Apr 2020		A, H	III
Chinese Taipei	LL	30 Apr 2020		A, H, I	III
	PS	30 Apr 2020		A, H, I	III
Tonga	LL	07 Apr 2020		A, H, K	III
Tuvalu	LL	07 Apr 2020		A, H	III
	PS	07 Apr 2020		A, H	III
United States	LL (American Samoa)	28 Apr 2020		B, E, F	III
	LL (Hawaii)	28 Apr 2020		B, E, F	III
	HL	28 Apr 2020		B, E, F	III
	TR			M	III
	PS	28 Apr 2020		A, H, K	III
Vanuatu	LL, PS	07 Apr 2020		A, H, I, K	III
Vietnam	LL, PS			M	III
	GN	01 May 2020		M	III
Wallis and Futuna	LL	29 Apr 2020		G	III

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 latitide/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, Yellowfin 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 WCFPC 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
K	Includes data collected through PORT SAMPLING by FLAG STATE.
L	Swordfish target fishery with swordfish size data provided at 5cm intervals.
M	Data not provided, despite activity in this fishery. However, this gap is not considered a WCPFC compliance issue.

TIER-SCORING EVALUATION LEVEL

I	No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II	Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. The % value assigned in this category represents the estimated proportion of the key attribute data provided compared to the full set of key attribute data required as stipulated in the the WCPFC data submission guidelines.
III	Data have been provided, there are no gaps in the data provided and the coverage of data is according to the requirements.

Table 8. Overall compliance evaluation for the provision of 2019 scientific data to the WCPFC

COUNTRY / TERRITORY / ENTITY	GEAR(s)	Annual Catch estimates	Aggregate CATCH/EFFORT data	Operational CATCH/EFFORT data	SIZE data	OVERALL Science Data
Australia	LL, PS, PL, HL,TR	100%	100%	100%	100%	100%
Belize	LL	100%	100%	100%	100%	100%
Canada	TR	100%	100%	100%	100%	100%
China	LL, PS	100%	100%	100%	100%	100%
Cook Islands	LL, PS, TR	100%	100%	100%	100%	100%
Ecuador	PS	100%	100%	100%	100%	100%
El Salvador	PS	100%	100%	100%	100%	100%
European Union	LL	100%	100%	100%	100%	100%
	PS	100%	100%	100%	100%	
Federated States of Micronesia	LL, PS	100%	100%	100%	100%	100%
Fiji Islands	LL, PL	100%	100%	100%	100%	100%
French Polynesia	LL, PL, OT	100%	100%	100%	100%	100%
Indonesia	LL, PS, PL, HL, TR, OT	100%	50%	72%	100%	81%
Japan	PS, LL, PL, TR, OT	100%	100%	100%	100%	100%
Kiribati	LL, PS, OT	100%	100%	100%	100%	100%
Republic of Korea	LL, PS	100%	100%	100%	100%	100%
Marshall Islands	LL, PS	100%	100%	100%	100%	100%
Nauru	PS	100%	100%	100%	100%	100%
New Caledonia	LL	100%	100%	100%	100%	100%
New Zealand	LL, PS, TR, PL	100%	100%	100%	100%	100%
Niue	LL	100%	100%	100%	100%	100%
Palau	LL, PL	100%	100%	100%	100%	100%
Papua New Guinea	LL, PS	100%	100%	100%	100%	100%
Philippines	PS, LL, HL, RN, OT	100%	100%	100%	100%	100%
Samoa	LL	100%	100%	100%	100%	100%
Senegal	LL	100%	100%	100%	100%	100%
Solomon Islands	LL, PS, PL	100%	100%	100%	100%	100%
Chinese Taipei	LL, PS	100%	100%	100%	100%	100%
Tokelau	OT	100%	100%	100%	100%	100%
Tonga	LL	100%	100%	100%	100%	100%
Tuvalu	LL, PS, OT	100%	100%	100%	100%	100%
United States	LL, PS, HL, PL	100%	100%	100%	100%	100%
	TR	100%	100%	100%	100%	
Vanuatu	LL, PS	100%	100%	100%	100%	100%
Vietnam	LL, GN, PS	100%	93%	80%	100%	93%
Wallis and Futuna	LL	100%	100%	100%	100%	100%

ANNEX 1 – Notes on tier-scoring evaluation system

WCPFC11 agreed to adopt the proposal to assign a tier-scoring evaluation system for the provision of scientific data to the WCPFC which clearly distinguishes between the three levels described below.[3] The tier-scoring system developed by the WCPFC science/data service provider (SPC/OFP) is a systematic process used to evaluate scientific data submissions against the requirements in the "Scientific Data to be Provided to the Commission[4]", which attempts to provide some measure of the significance of data gaps to the scientific work of the Commission.

The tier-scoring approach ranges from "LEVEL I" which indicates the most severe gap with little or no submission of data which has by far the greatest impacts on the scientific work of the Commission , and that "LEVEL III" would indicate fully satisfying the requirements for data submission.

I. No data are provided, or data have been provided but they have been evaluated as 'unusable' (instances where none of the data provided can be used in assessments). This level of data gap is the most severe and has by far the greatest impacts on the scientific work of the Commission.
II. Data have been provided, most of which can be used for the scientific work of the Commission, but (i) there are one or several (minimum-standard) data fields not provided and/or (ii) the coverage of the data is not according to the requirements. In these cases, some of the scientific work of the Commission cannot be undertaken. Within this level, further distinction on the level of data submission could be made by considering the number of missing data fields in the data provided (for example, a status of FOUR data gaps is considered more serious than a status of ONE data gap).
III. Data have been provided, there are no gaps in the (minimum standard) data fields provided and the coverage of data is sufficient to be used for undertaking the scientific work of the Commission.

It should be noted that the tier-score evaluation should not be considered a final compliance evaluation by the Commission on data gaps. However, it is recognized that the tier-score evaluation is expected to be amongst the advice and information that will be available to the TCC for its review of compliance with "Scientific data to be Provided to the Commission" decision through the WCPFC Compliance Monitoring process.

The methodology for determining the tier-scoring evaluation score listed in relevant columns of TABLES in this paper are as follows:

1. Where data have not been provided by a CCM, then a CATEGORY I level is assigned.
2. Where data provided by a CCM is deemed complete, without any gaps in (minimum standard) data fields provided, then a CATEGORY III level is assigned.
3. Where data provided by a CCM is deemed incomplete due to some fields missing, a CATEGORY II level is assigned, and the following procedures are used:
    a. The table below lists the total number of key attributes required in the submission of each type of scientific data.

KEY Attributes in each Scientific data type for TIER-SCORING EVALUATION					
Annual catch estimates	Aggregate catch/effort data - PS/PL	Aggregate catch/effort data - LL	Operational catch/effort data - PS/PL	Operational catch/effort data - LL	Size Data
26	26	42	28	47	9

    b. For each submission of data, the number of data field gaps are summed and subtracted from the total number of required data fields (by data type and gear) to produce a tier-scored percentage index for category II. For example, if a CCM submitted aggregate longline catch/effort data but did not include the catches of two key shark species (catch in weight and number = four data field gaps), then the tier-scored percentage index would be (42-4)/42 = 90%, and the assignment would be CATEGORY II (90%).

[3] WCPFC11 adopted the tier scoring system for evaluating compliance with the provision of scientific data to the Commission, on the understanding that TCC will keep looking at the process of refining the CMR. The tiered scoring system would be sent to the SC for its consideration.

[4] http://www.wcpfc.int/doc/data-01/scientific-data-be-provided-commission-revised-wcpfc4-6-7-and-9 is the basis of the evaluation of submissions of 2016 scientific data, but the latest version adopted at WCPFC13 (https://www.wcpfc.int/system/files/Att%20G_Revised%20SciData%20decision.pdf) will be used for submissions of 2017 scientific data, onwards.

4. The required coverage of OPERATIONAL DATA is 100% and the coverage for each CCM submission has been listed in a dedicated column for COVERAGE in Tables 5 and 6. The guidelines for the submission of scientific data indicate in section "4. Catch and effort data aggregated by time period and geographic area" 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 aggregated by time period and geographic area that have been raised to represent the total catch and effort shall be provided.*
>
> *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.*

The guidelines also indicate that "*It is also 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...*"

Instances where coverage of operational data is less than 100%, but (i) annual catch/effort estimates by geographic area have been made available and together with the operational level catch and effort data that has been submitted, is sufficient to allow the scientific work of the Commission to be undertaken, or (ii) the fleets in question are acknowledged to be "artisanal" in nature, have been distinctly highlighted in Tables 5 and 6.

As recommended by TCC11 (Anon, 2015b; Para. 388), this paper attempts to provide an overall evaluation of scientific data to the WCPFC in Table 8. This evaluation only considered **binding** requirements from the "Scientific data to be provided to the Commission", and did not consider (i) coverage of data types and (ii) other non-binding requirements listed in this document. This approach is consistent with how TCC reviews and uses the tier-scored evaluation information. The method for determining the overall evaluation was to take the average evaluation of each data type submission (without weighting). In each case, the evaluation level 'III' scored 100%, the evaluation level 'I' scored 0% and the evaluation level 'II' used the respective score (%) assigned in that data type. Where a CCM had a separate evaluation by gear(s) within a particular data type, then the average evaluation across all gears for that CCM and data type was determined and used.