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

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Rev 2. – an update to Table 6

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 2019 and 2020 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 2020 **annual catch estimates** by the deadline of the 30th April 2021. 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 2020 were provided by the deadline of 30th April 2021 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 2020, with the main gaps being

- (i) the low coverage in the data provided for the Indonesian and Vietnam fleets;
- (ii) the non-provision of certain required fields in the Indonesian operational data, and
- (iii) catches of key shark species are not included in the Indonesian fleet data.

However, there was some progress in the **operational catch/effort data** gaps reported for Indonesia and Vietnam in the past year, in resolving the non-provision of some of the required data fields. The coverage of 2020 operational data for some fleets is not complete (100%), although there was some improvement in coverage compared to the 2019 data.

This paper provides several proposals for SC17 consideration.

1. SC17 is invited to consider the outcomes of an initial study into the impacts of the COVID affected reduced observer coverage in the purse seine fishery on the precision of tuna catch estimates (Peatman et al., 2021). The outcomes suggest that, *inter alia*, reduced observer coverage significantly effects the precision of the purse seine bigeye tuna catch estimates in the aggregate data used for the assessments, so a return to 100% purse seine observer coverage is strongly recommended as soon as it is safe and logistically feasible; (see [SECTION 2.2](#))
2. SC17 is invited to review the draft *Guidelines for the Voluntary Submission of Purse Seine Processor Data by CCMs to the Commission* (the Annex in Williams, 2021) and consider endorsement for forwarding to TCC17 and WCPFC18; (see [SECTION 2.3](#))
3. SC17 is invited to note the benefits of an additional table structure for operational longline catch and effort data fields in the “*Scientific Data to be Provided to the Commission*” (see [ANNEX 2](#)), and if deemed acceptable, recommend further work to include the purse seine and pole-and-line operational catch effort data fields, for review by SC18 and TCC18; (see [SECTION 2.4](#))
4. SC17 is invited to review the proposal to establish a WCPFC public domain size data set for publication on the WCPFC web site and advise on a way forward, including a potential recommendation for TCC17 and WCPFC18; (see [SECTION 4.1](#))
5. SC17 is invited to review the latest version of the ACE Tables and provide comments and advice on the latest updates and any changes, as required. (see [SECTION 4.2](#))

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1. INTRODUCTION

2. 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:

1. 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 2010 (Anon. 2010), 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)
2. 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).

3. As specified in the recommendations for the provision of data, the Oceanic Fisheries Programme (OFP) of the Pacific Community (SPC), 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.

4. 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.

5. The WCPFC Data Catalogue has been updated on the WCPFC web site (<http://www.wcpfc.int/wcpfc-data-catalogue-0>) to cover the 2020 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).

6. 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, 2014) 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.

7. 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

8. 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 SC16 (Williams, 2020a)].

9. While there has been some work in the resolution of data gaps that were reported in previous papers, the restrictions to travel due to COVID-19 has impacted progress and work has only been conducted remotely, at best, without the benefits that physical meetings would provide. Therefore, there are no new developments to report this year other than to respond to the recommendations from SC16, which is provided in Section 2.2.

2.1 *Data gaps reported elsewhere*

10. 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.

11. 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, 2019 – Section 2.2), noting the need to continue the arrangement whereby the WCPFC scientific services provider has access to historical operational data for stock assessment purposes (see OFP, 2015a and OFP, 2015b).
- **Coverage rates** (Williams, 2014 – Section 2.2)
- **Indonesia, Philippines and Vietnam tuna fishery data** (Williams, 2020a – Section 2.2)
- **Key shark species** (Williams, 2017 – Section 2.3)
- **Nationality of the catch** (Williams, 2014 and Williams, 2020a – 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; Peatman et al., 2020; Peatman et al., 2021)
- **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** (MacDonald, J. et al., 2021)

12. 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 *Impact of reduced observer coverage on purse seine species catch estimates*

13. The observer coverage in the purse seine fishery in 2020 was much lower than the 100% target of the past decade due to the impacts of COVID-19. The estimated coverage for 2020 (when all observer data are provided) is expected to be at best 45–50% based on observer placement information.

14. To determine the potential impacts of reduced observer coverage on the purse seine tuna species catch estimates (including the aggregate data used in assessments), Peatman et al. (2021) conducted a sub-sampling exercise under the WCPFC Project 60 work plan to assess the precision in grab-sample based estimates of species compositions in 2018 and 2019 with reduced rates of observer coverage.

15. Even at 100% observer coverage, only ~0.1% of the catch can be sampled for species composition estimation, given the disruptions sampling causes to the brailing operation (and therefore is an objective to

resolve under Project 60). At this level of sampling, the precision of the estimates declines with progressively higher resolution of the strata required (that is, estimates at the set level are not precise).

16. The outcome of this initial subsampling study unsurprisingly suggests that decreasing precision in species composition estimates as observer coverage rate decreased and the estimates of catches of bigeye, and to a lesser extent yellowfin, were the most sensitive to reductions in observer coverage rate.

17. In particular, the estimation of bigeye tuna catch with expected levels of observer coverage for 2020 (a 60% reduction relative to 2018 and 2019 levels) for the strata used in the assessments (year, quarter and set type) had 95% confidence intervals covering +/- 20 to 40% for free schools and +/- 10 to 20% for associated sets.

18. Given the sensitivity of the estimates of purse seine bigeye tuna catch (at the very least) to reduced observer coverage, a return to 100% purse seine observer coverage is strongly recommended as soon as it is safe and logistically feasible.

2.3 Potential use of Cannery data

19. SC15 acknowledged the cannery data submissions to the WCPFC by International Seafood Sustainability Foundation (ISSF) participating companies, and the potential of cannery data for the work of the Commission and recommended that the WCPFC Scientific Services Provider (SSP) investigate what Commission mechanisms to expand the level of voluntary submission of cannery data from other processors for future Commission work.

20. SC16 reviewed the draft *Guidelines for the Voluntary Submission of Purse Seine Processor Data by CCMs to the Commission* (the Annex in the Williams, 2020b) under Topic 2 of the SC16 Online Discussion Forum (SC16-ODF), and the minor updates suggested during the ODF were included in the revised paper, which was subsequently made available prior to SC16.

21. SC17 is invited to once again review these draft guidelines which are available in SC17-2021-ST-WP-03 (Williams, 2021) and consider endorsement for forwarding to TCC17 and WCPFC18.

2.4 Proposal to enhance the Scientific data submission guidelines

22. The Attachment K, Annex 1. of the “*Scientific Data to be Provided to the Commission*” provide the standards for the provision of OPERATIONAL LEVEL CATCH AND EFFORT data to the Commission. These standards were developed to include an indication of the binding and non-binding requirements, although it may not be clear to the data technicians tasked to prepare the national data submissions. The following is a proposal which will not change the content of the scientific data submission guidelines but provides an additional annex to enhance the understanding of the standards for operational catch and effort data through a tabular structure, which is in line with what data technicians are expected to deal with. This additional information is also consistent with, and provides better linkages to the agreed [WCPFC Standards, Specifications and Procedures \(SSPs\) for Electronic Reporting in the WCPFC – operational catch and effort data](#).

23. [ANNEX 2](#) outlines the proposed table structure for the operational longline catch and effort data requirements, based on the text under Attachment K, Annex 1 of the “*Scientific Data to be Provided to the Commission*”.

24. SC17 is invited to note the benefits of this proposal and if deemed acceptable, recommend that the WCPFC Scientific Services Provider (SSP) expand the tables in ANNEX 2 to include the purse seine and pole-and-line operational catch effort data fields, for review by SC18 and TCC18.

3. RECENT PROVISIONS OF SCIENTIFIC DATA TO THE WCPFC

25. 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).

26. 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 TCC17 (September 2021).

3.1 Annual Catch Estimates

27. Tables 1 and 2 list the dates on which catch estimates for 2019 and 2020, 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).

28. All CCMs provided annual catch estimates for 2019 and 2020, by the respective deadlines (30 April 2020 and 30 April 2021). Indonesia, Philippines and Vietnam typically schedule their annual catch estimates review workshops after the submission deadline but prepared and submitted provisional 2020 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 2021, and we expect further revisions to be included in the WCPFC Part 1 Annual Reports.

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

3.2 Aggregate Catch/Effort data

30. Tables 3 and 4 list the dates on which aggregated catch and effort data were provided for 2019 and 2020, 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.

31. 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 2021).

32. 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.

33. The main gaps in the provision of 2020 aggregate catch/effort data to date are

- i. the absence of key shark species catch in the Indonesia,
- 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.

34. The timeliness of the provision of aggregate catch/effort data has been maintained from recent years with all other CCMs providing 2020 data by the deadline of 30th April 2021.

3.3 Operational catch/effort data

35. Tables 5 and 6 show the schedule for the submissions of 2019 and 2020 operational catch and effort data to the WCPFC, respectively. The difficulties in implementing logbook programs for small-scale fisheries is acknowledged and indicated in these tables. The gaps in the 2020 data submissions include:

- The low coverage in the data provided for the Indonesian and Vietnam fleets
- The non-provision of several required fields in the Indonesia operational data, for example, the hooks set and hooks between floats for the longline fishery.
- Catches of key shark species are not included in the Indonesian fleet data.

36. Positive developments during the past year to resolve gaps include (i) Vietnam has revised their national logbook to adhere to WCPFC operational data field requirements, and (ii) Indonesia are now providing the catch in number of fish in their logbook data submissions.

37. Most of the significant gaps in operational data have been resolved in recent years, as noted in Section 2.2 of Williams (2019). The coverage of operational data for some fleets is not complete (100%), although there was noted improvement in coverage in 2019 and 2020 compared to previous years.

38. The provision of **historical** operational data for the Asian tuna fleets (China, Indonesia, Japan, Korea and Chinese Taipei) remains 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

39. Table 7 shows the schedule for the submissions of 2020 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, 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 gaps in the provision of 2020 size data include one fleet (US albacore troll) where the logistics of collecting size data are challenging, and for two fleets (EU-Spain longline and Tuvalu longline) where the impacts of COVID-19 prevented any size data collection (through observers). We also note that provision of size data is only binding at the CCM level (that is, if data are provided for one gear for that CCM, then that submission satisfies the provision of size data even if data have not been provided for another gear type for that CCM).

3.5 Overall scientific data submission evaluation

40. 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.

41. For the submission of 2020 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 2020 data submissions) were at least at 84% or greater, noting that some of these data gaps may be resolved before TCC17.

3.6 Regional Observer Programme (ROP) data

42. The SPC/OFP has been processing observer data on behalf of its 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).

43. Panizza et al. (2021) describes the recent developments, future work and initiatives with respect to ROP data management. This paper also includes

1. Tables summarizing current coverage of available observer data by gear;
2. Tables summarizing observer data by Pacific Island observer providers;
3. Tables summarizing data generated from E-Monitoring trials that have been provided to the Scientific Services provider.

4. RECENT DEVELOPMENTS IN DISSEMINATION OF DATA

4.1 Proposal to publish public domain size data

44. The [WCPFC data dissemination rules](#) indicate that fish SIZE data should be considered as public domain data according to the following excerpts from the rules :

Table 1. Types of information and confidentiality classification.

Information Type	Risk classification
[Biological data (if adequate time has passed to allow the scientists that organised the for collection of such data to publish a paper analysing it)]	Lowest

Table 2. Annotations on information types mentioned in Table 1.

Information Type	Annotations
Biological data	Biological data include size data , data on gender and maturity genetic data on hard parts such as otoliths stomach contents and isotopic N15/C14 data collected by observers port samplers and other sources. “Biological data” in this context does not include information identifying the fishing vessel for example which would otherwise alter its security classification.

APPENDIX 1. Public Domain data

- 5) [biological data (if adequate time has passed to allow the scientists that organised for the collection of such data to publish a paper analysing it)];

45. There have been several requests for size data received by the WCPFC Secretariat and the WCPFC SSP and based on these agreed definitions, SIZE data would normally be classified as ‘public domain data’. However, the WCPFC SSP (as the contracted WCPFC Data Manager) is unsure how to interpret the reference to “*if adequate time has passed to allow the scientists that organised for the collection of such data to publish a paper analysing it*” and therefore seeks SC17 and TCC17’s advice and approval on the following proposal to publish the consolidated aggregated size data received from CCMs on the WCPFC public domain data web pages.

46. The proposal entails publishing the following aggregated WCPFC size data fields (and relevant metadata) on the WCPFC public domain data web pages:

Data field	Description	Notes
Gr_code	Gear type code L : Longline	

Data field	Description	Notes
	S : purse seine P : Pole-and-line	
YY	Year	
MM	Month	
QQ	Quarter	
TSTRAT	Temporal stratification M : Monthly Q : Quarterly	
Lat	Latitude (minimum resolution of 5°)	
Lon	Longitude (minimum resolution of 5°)	
ASTRAT	Spatial stratification 5 : 5°x5° lat/lon cells F : 5°x10° lat/lon cells 0 : 10°x10° lat/lon cells T : 10°x20° lat/lon cells	
Sp_Code	Key WCPFC Species code (FAO species)	
Len	Length (cm)	
Len_code	Length measurement type UF : Upper jaw - fork length LF : lower jaw - fork length TL : Total length	
LSTRAT	Length interval: 1cm, 2cm, 5cm	
Freq	Frequency of fish (N)	

47. The publishing of data at this level removes any issues of confidentiality at the FLAG level. In regard to having ‘*adequate time for national scientists to analyse the data for publication*’, the following are proposed options for consideration:

1. exclude size data for the two (2) most recent years of the WCPFC data submissions from the public domain size data; OR
2. include all size data in the public domain size data but allow for CCMs to advise on which of their size data submissions should be excluded (based on the need for “..adequate time for national scientists to analyse the data for publication”).

48. SC17 is invited to review the proposal to establish a WCPFC public domain size data set for publication on the WCPFC web site and advise on a way forward, including a potential recommendation for TCC17 and WCPFC18.

4.2 Latest developments on the Annual catch estimates (ACE) tables

49. 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.

50. 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*¹, 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) included a summary of CCM comments on the ACE Tables and proposed future work on the ACE Tables in response to those comments.

51. WCPFC17 (Anon., 2020. para. 52) recommended that the WCPFC SSP review the feasibility of expanding the ACE tables to include:

- a. additional estimates of effort where it is practicable to be derived based on the April 30 scientific data submissions from CCMs and provide an update to SC17; and

¹ The survey also posed questions related to the online tool for the Annual Report Part 2

- b. estimates of annual area-based CMM quantitative limits where it is practicable for the estimate to be derived based on the April 30 scientific data submissions from CCMs and to provide an update to TCC17.

52. The updates suggested by WCPFC17 have been made to the latest version of the ACE Tables which are available on the WCPFC web site at <https://www.wcpfc.int/ace-by-fleet>. SC17 is invited to review the latest version of the ACE Tables and provide comments and advice on the latest updates and any changes, as required.

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. 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. 2014. 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. 2020. Provisional outcomes document of the Seventeenth Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC17). 8–15 December 20120 Electronic meeting. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.
- Macdonald, J., P. Williams, C. Sanchez, E. Schneider, M. Ghergariu, M. Hosken, A. Panizza, T. Park. 2021. Project 90 update: Better data on fish weights and lengths for scientific analyses ST IP–05. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.
- 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.
- Panizza, A., P.G. Williams, C. Falasi, E. Loganimoce. 2021. Status of ROP data management. Information Paper ST IP–02. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.
- 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 (SC16). Online Meeting. 11–20 August 2020.
- Peatman, T., P. Williams and S. Nicol. 2021. Better purse seine catch composition estimates: recent progress and future work plan for Project 60. SC17 ST-IP-06. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.
- 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.
- 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. 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. 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. 2019. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC14 ST WP-1. Fifteenth Regular Session of the WCPFC Scientific Committee (SC15). Busan, Republic of Korea. 8–16 August 2019.
- Williams, P.G. 2020a. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC14 ST WP-1. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC16). Pohnpei, FSM. 12–20 August 2020.
- Williams, P.G. 2020b. An update on cannery data with potential use to the WCPFC. SC16 ST-IP-03. Sixteenth Regular Session of the Scientific Committee of the WCPFC (SC16). Online Meeting. 11–20 August 2020.
- Williams, P.G. 2021. Draft Guidelines for the Voluntary Submission of Purse Seine Processor Data by CCMs to the Commission. SC17 ST-WP-03. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.

TABLES

Table 1. 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/OPF 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 breakdown 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 2020 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 2021		G, H	III
Canada	TR	28 Apr 2021			III
China	LL, PS	30 Apr 2021			III
Cook Islands	LL, PS, TR	09 Apr 2021		G, H	III
Ecuador	PS	28 Apr 2021			III
El Salvador	PS	25 Apr 2021			III
European Union	LL, PS	21 Apr 2021			III
Federated States of Micronesia	LL, PS	09 Apr 2021		G, H	III
Fiji Islands	LL, PL	09 Apr 2021		G, H	III
French Polynesia	LL, PL, OT	09 Apr 2021		G, H	III
Indonesia	LL	30 Apr 2021		F	III
	PS, PL, HL, TR, OT	30 Apr 2021		F, J	III
Japan	PS, LL	21 Apr 2021		F, C	III
	PL, TR, OT	21 Apr 2021		F	III
Kiribati	LL, PS, OT	09 Apr 2021		G, H	III
Republic of Korea	LL, PS	30 Apr 2021		H	III
Marshall Islands	LL, PS	09 Apr 2021		G, H	III
Nauru	PS	09 Apr 2021		G, H	III
New Caledonia	LL	09 Apr 2021		G, H	III
New Zealand	LL, PS, TR, PL	30 Apr 2021		G, H	III
Niue	LL	09 Apr 2021		D	III
Palau	LL, PL	09 Apr 2021		G, H	III
Papua New Guinea	LL, PS	09 Apr 2021		G, H	III
Philippines	PS	14 Apr 2021		F, G, H	III
	LL	14 Apr 2021		D	III
	HL, RN, OT	14 Apr 2021		F, J	III
Samoa	LL	09 Apr 2021		G, H	III
Solomon Islands	LL	09 Apr 2021		G, H	III
	PS, PL	09 Apr 2021		H	III
Chinese Taipei	LL, PS	30 Apr 2021			III
Tokelau	OT	09 Apr 2021			III
Tonga	LL	09 Apr 2021		G, H	III
Tuvalu	LL, PS, OT	09 Apr 2021		G, H	III
United States	LL, PS, TR, HL, PL	29 Apr 2021		G, H	III
Vanuatu	LL, PS	09 Apr 2021		G, H	III
Vietnam	LL/HL, GN, PS	23 Apr 2021		F, L	III
Wallis and Futuna	LL	09 Apr 2021		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 breakdown 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 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, FL, 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, FL	07 Apr 2020		J, O	III
French Polynesia	LL	07 Apr 2020		J, O	III
Indonesia	LL, PS, FL	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
	FL	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, FL, HL, PS	30 Apr 2020		C, I	III
Niue	LL	07 Apr 2020		E	III
Palau	LL, FL	07 Apr 2020		J, O	III
Papua New Guinea	LL, PS	07 Apr 2020		J, O	III
	PS	07 Apr 2020		M, Q	III
Philippines	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
	FL, 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 (Haw aii)	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 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 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 2020 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 2021		C, I	III
Canada	TR	28 Apr 2021			III
China	LL (DWFN)	30 Apr 2021		P	III
	PS	30 Apr 2021		P	III
Cook Islands	LL, PS, TR	09 Apr 2021		J, O	III
Ecuador	PS	28 Apr 2021		C	III
El Salvador	PS	30 Apr 2021		C	III
European Union	LL	21 Apr 2021		C, F, P, R	III
	PS	21 Apr 2021		C	III
Federated States of Micronesia	LL, PS	09 Apr 2021		J, O	III
Fiji Islands	LL, PL	09 Apr 2021		J, O	III
French Polynesia	LL	09 Apr 2021		J, O	III
Indonesia	LL, PS, PL	30 Apr 2021	18	Q, O, S, T	II (50%)
	HL, TR, GN, OT	30 Apr 2021		N, Q	III
Japan	LL	21 Apr 2021		A, F, H, I, L, R	III
	PL	21 Apr 2021		L	III
	PS	21 Apr 2021		L	III
Kiribati	LL, PS	09 Apr 2021		J, O	III
Marshall Islands	LL, PS	09 Apr 2021		J, O	III
Nauru	PS	09 Apr 2021		J, O	III
New Caledonia	LL	09 Apr 2021		J, O	III
New Zealand	LL, PL, HL, PS	30 Apr 2021		C, I	III
Niue	LL	09 Apr 2021		E	III
Palau	LL, PL	09 Apr 2021		J, O	III
Papua New Guinea	LL, PS	09 Apr 2021		J, O	III
	PS	14 Apr 2021		M, Q	III
Philippines	LL	14 Apr 2021		E	III
	HL, RN, OT	14 Apr 2021		M, N, Q, T	III
Republic of Korea	LL	30 Apr 2021		P	III
	PS	30 Apr 2021		P	III
Samoa	LL	09 Apr 2021		J, O	III
Solomon Islands	LL	09 Apr 2021		J, O	III
	PL, PS	09 Apr 2021		J	III
Chinese Taipei	LL (DWFN)	30 Apr 2021		H, I, L	III
	LL (small)	30 Apr 2021		H, I, L	III
	PS	30 Apr 2021		L	III
Tonga	LL	09 Apr 2021		J, O	III
Tuvalu	LL, PS	09 Apr 2021		J, O	III
United States	LL (American Samoa)	29 Apr 2021		B, I	III
	LL (Haw aii)	29 Apr 2021		B, I	III
	PS (Treaty)	29 Apr 2021		J	III
	TR	29 Apr 2021		B	III
Vanuatu	LL, PS	09 Apr 2021		J, O	III
Vietnam	LL/HL	23 Apr 2021	18	M, Q, S, T	II (95%)
	PS, GN	23 Apr 2021	18	M, Q, S, T	II (92%)
Wallis and Futuna	LL	09 Apr 2021		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 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 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 2019 Operational catch and effort data to the WCPFC

FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL	
					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	I	III	35% *
	PS	30 Apr 2020			III	100%
Cook Islands	LL, PS	07 Apr 2020	11	C, J	III	95% *
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	C, J, F	III	45% *
	PS		11	C, J	III	80% *
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		E, M	III	100%
Kiribati	LL	07 Apr 2020	11	C, J, F	III	70% *
	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	75% *
Papua New Guinea	LL	07 Apr 2020	6	C, J, F	III	20% *
	PS		11	C, J, F	III	70% *
Philippines	PS	07 Apr 2020	11	J, K	III	80% *
	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	90% *
	PS			C, J, F	III	100%
	PL			C, J	III	100%
Chinese Taipei	LL	30 Apr 2020	11	E, F	III	80% *
	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	11	C, J, F	III	80% *
	PS	07 Apr 2020		C, J, F	III	100%
Vietnam	LL/HL	29 Apr 2020	6, 8	G, H, K, F, N	II (85%)	< 10%
	PS, GN	29 Apr 2020	6, 8	G, H, K, F, N	II (75%)	< 10%
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

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 determined 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 2020 Operational catch and effort data to the WCPFC

FLAG STATE / ENTITY	GEAR(s)	Date Submitted	DATA-GAP Notes	General NOTES	TIER-SCORING EVALUATION LEVEL	
					KEY ATTRIBUTES	COVERAGE
Australia	LL, PL, PS, TR	30 Apr 2021		E	III	100%
Canada	TR	28 Apr 2021			III	100%
China	LL	30 Apr 2021	11	I	III	70% *
	PS	30 Apr 2021			III	100%
Cook Islands	LL, PS	09 Apr 2021		C, J	III	100%
Ecuador	PS	28 Apr 2021	11	F	III	80% *
El Salvador	PS	30 Apr 2021			III	100%
European Union	LL	21 Apr 2021		E	III	100%
	PS			III	100%	
Federated States of Micronesia	LL	09 Apr 2021	11	C, J, F	III	60% *
	PS		11	C, J	III	85% *
Fiji Islands	LL, PL	09 Apr 2021		C, J	III	100%
French Polynesia	LL	09 Apr 2021		C, J, F	III	100%
	OT	09 Apr 2021		G, L	III	#
Indonesia	LL, PS, PL	30 Apr 2021	1,2,4,5,6,9	K	II (96%)	< 10%
	HL, TR, GN, OT			G, K	III	#
Japan	PS, PL	21 Apr 2021		E, M	III	100%
	LL	21 Apr 2021	11	E, M	III	65% *
Kiribati	LL	09 Apr 2021	11	C, J, F	III	100%
	PS			C, J, F	III	95% *
Republic of Korea	LL	30 Apr 2021		E	III	100%
	PS			E	III	100%
Marshall Islands	LL	09 Apr 2021		C, J	III	100%
	PS			C, J	III	100%
Nauru	PS	09 Apr 2021		C, J	III	100%
New Caledonia	LL	09 Apr 2021		C, J	III	100%
New Zealand	LL	30 Apr 2021		E, F	III	100%
	PL, TR, PS			E	III	100%
Niue	LL	09 Apr 2021		A	III	N/A
Palau	LL	09 Apr 2021		C, J	III	100%
Papua New Guinea	LL	09 Apr 2021	11	C, J, F	III	100%
	PS			C, J, F	III	95% *
Philippines	PS	14 Apr 2021	11	J, K	III	70% *
	LL	14 Apr 2021		A	III	N/A
	HL, RN, OT			G, K	III	#
Samoa	LL	09 Apr 2021	11	C, J	III	85% *
Solomon Islands	LL	09 Apr 2021	11	C, J	III	80% *
	PS			C, J, F	III	100%
	PL			C, J	III	100%
Chinese Taipei	LL	30 Apr 2021		E, F	III	100%
	PS	30 Apr 2021		F	III	100%
Tonga	LL	09 Apr 2021		C, J	III	100%
Tuvalu	LL, PS	09 Apr 2021		C, J	III	100%
United States	LL (American Samoa)	29 Apr 2021		E	III	100%
	LL (CNMI, GUAM)	29 Apr 2021		E	III	100%
	LL (Hawaii)	29 Apr 2021		E	III	100%
	PL, HL, TR (trop)			G	III	#
	PS	29 Apr 2021		B	III	100%
	TR (ALB)	29 Apr 2021			III	100%
Vanuatu	LL	09 Apr 2021		C, J, F	III	100%
	PS	09 Apr 2021		C, J, F	III	100%
Vietnam	LL/HL	23 Apr 2021	6, 8	G, H, K, F, N	III	< 10%
	PS, GN	23 Apr 2021	6, 8	G, H, K, F, N	III	< 10%
Wallis and Futuna	LL	30 Apr 2021		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 determined 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 2020 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 2021		B, C	III
	PL, PS, TR			J	III
Canada	TR	28 Apr 2021		A	III
China	LL	30 Apr 2021		A, H	III
	PS	30 Apr 2021		A, H	III
Cook Islands	LL, PS	09 Apr 2021		A, H, K	III
Ecuador	PS	28 Apr 2021		H	III
El Salvador	PS	30 Apr 2021		H	III
European Union	LL			L, M, N	III
	PS	21 Apr 2021		H	III
Federated States of Micronesia	LL, PS	09 Apr 2021		A, H, I, K	III
Fiji Islands	LL, PL	09 Apr 2021		A, H, K	III
French Polynesia	LL	09 Apr 2021		A, H, K	III
Indonesia	LL, PS, OT	25 Mar 2021		A, K	III
Japan	PS	21 Apr 2021		A, H	III
	LL, PL	21 Apr 2021		A, H, I	III
Kiribati	LL	09 Apr 2021		A, H, K	III
	PS	09 Apr 2021		A, H	III
Republic of Korea	LL, PS	30 Apr 2021		A, H	III
Marshall Islands	LL, PS	09 Apr 2021		A, H, K	III
Nauru	PS	09 Apr 2021		A, H, K	III
New Caledonia	LL	09 Apr 2021		A, H, K	III
New Zealand	LL, PL, PS, TR	30 Apr 2021		A, H	III
Niue	LL	09 Apr 2021		G	III
Palau	LL, PL	09 Apr 2021		A, H, K	III
Papua New Guinea	LL, PS	09 Apr 2021		A, H	III
Philippines	PS, HL, RN, OT	14 Apr 2021		A, H, K	III
	LL	14 Apr 2021		G	III
Samoa	LL	09 Apr 2021		A, H, K	III
Solomon Islands	LL, PS, PL	09 Apr 2021		A, H	III
Chinese Taipei	LL	30 Apr 2021		A, H, I	III
	PS	30 Apr 2021		A, H, I	III
Tonga	LL	09 Apr 2021		A, H, K	III
Tuvalu	LL			A, H, N	III
	PS	09 Apr 2021		A, H	III
United States	LL (American Samoa)	28 Apr 2021		B, E, F	III
	LL (Hawaii)	28 Apr 2021		B, E, F	III
	HL	28 Apr 2021		B, E, F	III
	TR			M	III
	PS	28 Apr 2021		A, H, K	III
Vanuatu	LL, PS	09 Apr 2021		A, H, I, K	III
Vietnam	LL, PS	09 Apr 2021		M	III
	GN	09 Apr 2021		M	III
Wallis and Futuna	LL	09 Apr 2021		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 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
- 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.
- N No size data collection for this fleet due to the impact of COVID-19

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 2020 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%	85%	100%	84%
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%	100%	100%	98%
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.² 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 Commission³”, 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%).

² 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.

³ <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.

ANNEX 2 – Proposed additional ANNEX to the “Scientific Data to be Provided to the Commission”

A2.1 Longline operational data – TRIP INFORMATION

FIELD	Reference text in Attachment K, Annex 1.	Binding	Notes on recommended submission requirements
TRIP IDENTIFIER		NO	Internally generated. Can be NATURAL KEY or unique integer. NATURAL KEY would be VESSEL + DEPARTURE DATE
VESSEL IDENTIFIER	<p>Name of the <u>vessel</u>, <u>country of registration</u>, <u>registration number</u>, and <u>international radio call sign</u>:</p> <p>The registration number is the number assigned to the vessel by the state that has flagged the vessel. A code may be used as a vessel identifier instead of the name of the vessel, registration number and call sign for vessels that have fished and that intend to fish only in the waters of national jurisdiction of the State that has flagged the vessel.</p>	YES	<p>Using a vessel identifier field (ideally the WCPFC VID) removes the redundancy of including all vessel attributes with each trip record and ensures standardisation and consistency through referencing the WCPFC Vessel Registry database.</p> <p>Please provide a separate list of Vessel attributes linked to the Vessel identifier field.</p>
PORT/PLACE OF DEPARTURE	<p>The start of a trip is defined to occur when a vessel (a) leaves port after unloading part or all of the catch to transit to a fishing area or (b) recommences fishing operations or transits to a fishing area after transshipping part or all of the catch at sea (when this occurs in accordance with the terms and conditions of article 4 of Annex III of the Convention, subject to specific exemptions as per article 29 of the Convention).</p> <p>If the start of a trip coincides with recommencing fishing operations or transiting to a fishing area after transshipping part or all of the catch at sea, then “Transshipment at sea” shall be reported in lieu of the port of departure.</p>	YES	<p>Where possible, please provide a standardised Port location code through the following facility</p> <p>https://unece.org/trade/cefact/unlocode-code-list-country-and-territory</p> <p>The WCPFC will consider the establishment of WCPFC LOCATION CODEs in the future.</p>
PORT/PLACE OF UNLOADING	<p>If the end of a trip coincides with transshipping part or all of the catch at sea, then “ATSEA” code shall be reported in lieu of the port of unloading.</p>	YES	<p>Where possible, please provide a standardised Port location code through the following facility</p> <p>https://unece.org/trade/cefact/unlocode-code-list-country-and-territory</p> <p>The WCPFC will consider the establishment of WCPFC LOCATION CODEs in the future.</p>
DATE OF DEPARTURE	<p><u>Date of departure from Port</u>. If the start of a trip coincides with recommencing fishing operations or transiting to a fishing area after transshipping part or all of the catch at sea, then date for the transshipment at sea shall be indicated.</p>	YES	Recommend using ISO 8601 - Date only format
DATE OF UNLOADING	<p><u>Date of return to Port</u> If the end of a trip coincides with transshipping part or all of the catch at sea, then date for the transshipment at sea shall be indicated.</p>	YES	Recommend using ISO 8601 - Date only format

A2.2 Longline operational data – ACTIVITY INFORMATION

FIELD	Reference text in Attachment K, Annex 1.	Binding	Notes on recommended submission requirements
TRIP IDENTIFIER		NO	Internally generated. Can be NATURAL KEY or unique integer. NATURAL KEY would be VESSEL + DEPARTURE DATE
ACTIVITY IDENTIFIER		NO	Internally generated. Can be NATURAL KEY or unique integer. NATURAL KEY would be DATE + START TIME OF ACTIVITY
ACTIVITY	<u>Activity</u> : This item shall be reported for each set. Activities should include "a set".	YES	Suggest using a standardised numeric code for each activity.
	<u>Activity</u> : This item ... should be reported for days on which no sets were made, from the start of the trip to the end of the trip. Activities should include "no fishing – in transit"; "no fishing – gear breakdown"; "no fishing – bad weather"; and "no fishing – in port".	NO	
DATE/TIME OF ACTIVITY	<u>Date of start of set and time of start of set</u> . CCMS shall provide information on how their vessels report time zone/format.	YES	
	The date and start of set time should be GMT/UTC. If no sets are made, the date and main activity should be reported.	NO	Please provide the NOON DATE/TIME for each day that the vessel is at sea when a set was not made on that day.
POSITION OF START OF SET	<u>Position of start of set:</u>	YES	Please provide position according to ISO 6709 – Positions in degrees and minutes (to 3 decimal places where relevant).
	The position of start of set should be reported in units of at least minutes of latitude and longitude. If no sets are made for the day, the noon position should be reported.	NO	
NUMBER OF HOOKS PER SET	Number of hooks per set	YES	
NUMBER OF BRANCLINES	Number of branch lines between floats. The number of branch lines between floats shall be reported for each set.	YES	The "Number of Branchlines" are also commonly referred to as "Hooks between floats" or "Branchlines between FLOATS" for some fleets.

A2.3 Longline operational data – CATCH INFORMATION

FIELD	Reference text in Attachment K, Annex 1.	Binding	Notes on recommended submission requirements																																	
TRIP IDENTIFIER		NO	Internally generated. Can be NATURAL KEY or unique integer. NATURAL KEY would be VESSEL + DEPARTURE DATE																																	
ACTIVITY IDENTIFIER		NO	Internally generated. Can be NATURAL KEY or unique integer. NATURAL KEY would be DATE + START TIME OF ACTIVITY																																	
SPECIES CODE	The following species:	YES	Key WCPFC Species. For each species taken in the set, PROVIDE the SPECIES CODE according to the FAO standard species code list.																																	
	<table border="1"> <thead> <tr> <th>Species name</th> <th>FAO Code</th> </tr> </thead> <tbody> <tr> <td>albacore (<i>Thunnus alalunga</i>),</td> <td>ALB</td> </tr> <tr> <td>bigeye (<i>Thunnus obesus</i>),</td> <td>BET</td> </tr> <tr> <td>skipjack (<i>Katsuwonus pelamis</i>),</td> <td>SKJ</td> </tr> <tr> <td>yellowfin (<i>Thunnus albacares</i>),</td> <td>YFT</td> </tr> <tr> <td>striped marlin (<i>Tetrapturus audax</i>),</td> <td>MLS</td> </tr> <tr> <td>blue marlin (<i>Makaira mazara</i>),</td> <td>BUM</td> </tr> <tr> <td>black marlin (<i>Makaira indica</i>)</td> <td>BLM</td> </tr> <tr> <td>swordfish (<i>Xiphias gladius</i>),</td> <td>SWO</td> </tr> <tr> <td>blue shark,</td> <td>BSH</td> </tr> <tr> <td>silky shark,</td> <td>FAL</td> </tr> <tr> <td>oceanic whitetip shark,</td> <td>OCS</td> </tr> <tr> <td>mako sharks,</td> <td>MAK, SMA, LMA</td> </tr> <tr> <td>thresher sharks,</td> <td>THR, ALV, PTH, BTH</td> </tr> <tr> <td>porbeagle shark,</td> <td>POR</td> </tr> <tr> <td>hammerhead sharks (winghead, scalloped, great, and smooth)</td> <td>SPN, SPK, SPL, SPZ, SPQ, EUB</td> </tr> <tr> <td>whale shark,</td> <td>RHN</td> </tr> <tr> <td>other species as determined by the Commission.</td> <td></td> </tr> </tbody> </table>			Species name	FAO Code	albacore (<i>Thunnus alalunga</i>),	ALB	bigeye (<i>Thunnus obesus</i>),	BET	skipjack (<i>Katsuwonus pelamis</i>),	SKJ	yellowfin (<i>Thunnus albacares</i>),	YFT	striped marlin (<i>Tetrapturus audax</i>),	MLS	blue marlin (<i>Makaira mazara</i>),	BUM	black marlin (<i>Makaira indica</i>)	BLM	swordfish (<i>Xiphias gladius</i>),	SWO	blue shark,	BSH	silky shark,	FAL	oceanic whitetip shark,	OCS	mako sharks,	MAK, SMA, LMA	thresher sharks,	THR, ALV, PTH, BTH	porbeagle shark,	POR	hammerhead sharks (winghead, scalloped, great, and smooth)	SPN, SPK, SPL, SPZ, SPQ, EUB	whale shark,
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	Species that are not WCPFC key species.	NO	Other species not included in list of Key WCPFC species.																																	
CATCH NUMBER	<u>Number of fish caught per set</u> for each of the key WCPFC species.	YES	For each of the key WCPFC species. Also for other non-key WCPFC species if provided.																																	
CATCH WEIGHT	If the total weight or average weight of fish caught per set has been recorded, then the total weight or average weight of fish caught per set, by species, shall also be reported. If the total weight or average weight of fish caught per set has not been recorded, then the total weight or average weight of fish caught per set, by species, should be estimated and the estimates reported. The total weight or average weight shall refer to whole weights, rather than processed weights.	NO	For each of the key WCPFC species.																																	
DISCARDED / RELEASED NUMBER	<u>Number of fish discarded or released per set</u> for each of the key WCPFC species.	NO	For each of the key WCPFC species.																																	

