



**NORTHERN COMMITTEE
EIGHTEENTH REGULAR SESSION
ELECTRONIC MEETING**

8am-12am, 4-6 October 2022, Japan Standard Time

SC18's Brief Summary for NC18

WCPFC-NC18-2022/IP-02a

Secretariat

1. This paper provides a brief description on the SC18 meeting outputs related to NC18 issues. For full recommendations and detailed discussions, please refer to the SC18 Outcomes Document (NC18-IP-02) and the DRAFT Summary Report on the SC18 website.

OPENING OF THE MEETING

2. The third online session of the SC18 took place for seven days during 10–18 August 2022 in response to the continued COVID-19 pandemic. The meeting was chaired by the SC Chair Dr Tuikolongahau Halafihi (Tonga).

REVIEW OF WCPO FISHERIES

3. The provisional total tuna catches in the WCPFC Statistical Area for 2021 was estimated at 2,493,571 mt (the record catch of 2,987,931 mt in 2019), which represented 87% of the total Pacific Ocean tuna catch and 56% of the global tuna catch. The value of the provisional total WCPO tuna catch was around \$4.6 billion.

| Species | Catch (mt) | % |
|-----------|---------------------------------------|------|
| Skipjack | 1,547,945 | 62.1 |
| Yellowfin | 695,097 | 27.9 |
| Bigeye | 169,113 | 6.8 |
| Albacore | 81,416 (NP: 29,243; SP: 52,173) | 3.3 |

| Gear | Catch (mt) | % |
|-------------------|------------|------|
| Purse seine | 1,740,370 | 69.8 |
| Pole-and-line | 123,528 | 5.0 |
| Longline | 191,666 | 7.7 |
| SP Troll albacore | 4,037 | 0.2 |
| Others | 433,970 | 17.4 |

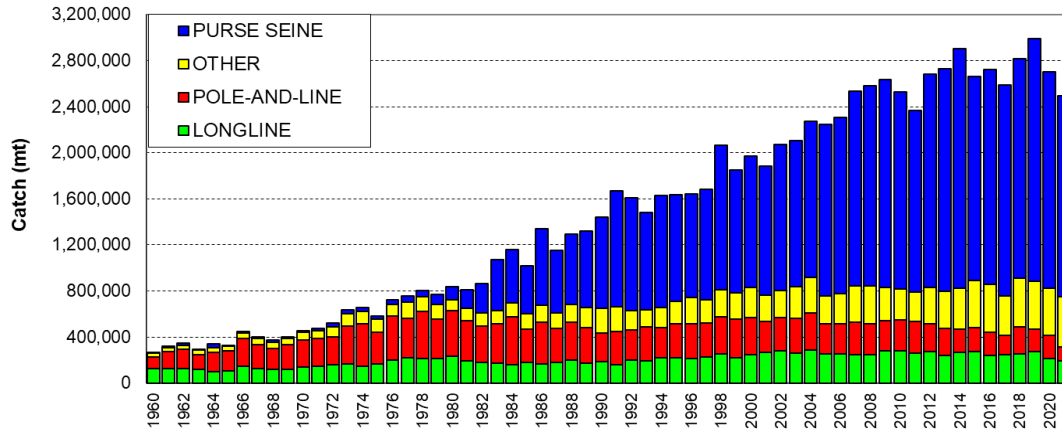


Figure 1. Catch (mt) of albacore, bigeye, skipjack and yellowfin tuna in the WCPFC Statistical Area by fishing gear type

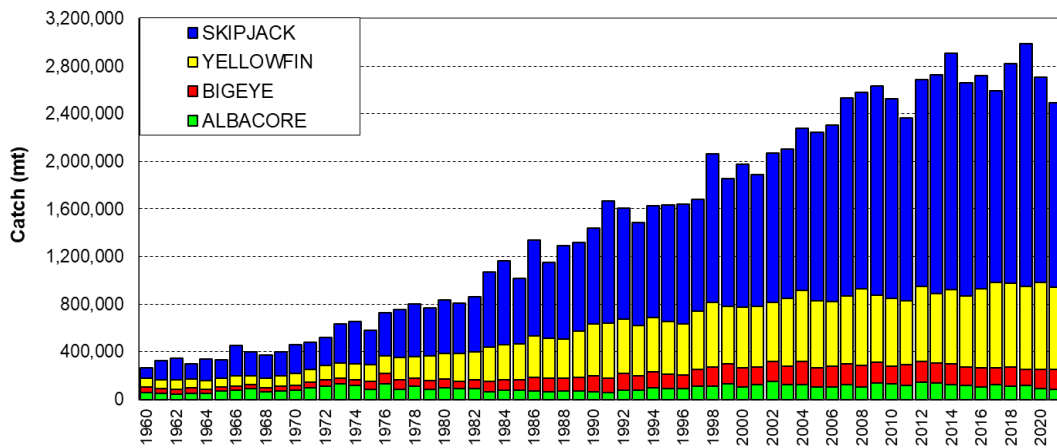


Figure 2. Catch (mt) of albacore, bigeye, skipjack and yellowfin in the WCPFC Statistical Area

STOCK ASSESSMENTS

4. SC18 reviewed stock assessments for six species: skipjack, PBF, SWP blue shark, SWP shortfin mako shark, NP blue shark and NP striped marlin. Refer to the SC18 Outcomes Document (NC18-IP-02) and [Draft SC18 Summary Report](#) for details.

5. Skipjack tuna (*Katsuwonus pelamis*)

The overall median recent spawning depletion ($SB_{\text{recent}}/SB_{F=0}$) is 0.51 (80th percentile 0.43-0.64), which is close to the interim TRP of 0.50 and no grid models were below the LRP of $0.20SB_{F=0}$. The median of $F_{\text{recent}}/F_{\text{MSY}}$ was 0.32 (80th percentile 0.18-0.45). Therefore, the 2022 stock assessment indicated that the skipjack stock is not overfished, nor subject to overfishing. After lengthy discussions, SC18 did not achieve a consensus on the management advice for skipjack tuna in the WCPO.

6. Southwest Pacific blue shark (*Prionace glauca*)

SC18 noted that the median value of relative recent dynamic spawning biomass depletion ($SB_{2017-2020}/SB_{F=0}$) was 0.71 (90th percentiles 0.37 and 0.82), and relative recent equilibrium spawning biomass depletion ($SB_{2017-2020}/SB_0$) was 0.80 (90th percentiles 0.43 and 0.90). SC18 also noted that the fishing mortality has declined over the last decade and is currently relatively low with the median $F_{2017-2020}/F_{MSY} = 0.65$ (90th percentiles 0.43 and 0.86). Based on the above information, SC18 advised the Commission that the Southwest Pacific blue shark is unlikely to be overfished and it is unlikely that overfishing is occurring when considered against MSY and depletion-based reference points.

7. Southwest Pacific shortfin mako shark (*Isurus oxyrinchus*)

The authors noted that the assessment models had high estimation uncertainty and were sensitive to a range of inputs. Therefore, SC18 found it was unable to provide stock status and management advice on this stock. SC18 noted that a large number of CCMs currently release (cut sharks free) shortfin mako sharks, which may result in a reduction in fishing mortality and SC18 encourages CCMs to continue to maintain this practice as a precautionary measure for a slow growing, unproductive species with unknown stock status. Noting the key uncertainties in the assessment, SC18 have provided future research recommendations to improve future stock assessment for this species.

8. Pacific Bluefin Tuna (*Thunnus orientalis*)

SC18 noted that the current spawning biomass of the stock is overfished, 10.2% of the unfished level, while SSB reached its initial rebuilding target ($SSB_{MED} = 6.3\%SSB_0$) in 2019, 5 years earlier than the original anticipation. The recent (2018-2020) fishing mortality is below the level corresponding to overfishing for many F-based reference points, including SPR20%. SC18 noted that the updated stock assessment indicates that the stock is likely recovering as planned or possibly faster and recommended that the Commission exercise a precautionary approach when it considers any revisions to the current CMM.

9. North Pacific blue shark (*Prionace glauca*)

SC18 noted that the current assessment is an improvement over the previous assessment in 2021 and supports the model ensemble approach taken in the 2022 stock assessment as a more comprehensive way of characterizing structural uncertainty in stock status. However, SC18 noted that the model ensemble did not consider some key uncertainties, in particular natural mortality or stock-recruitment steepness and SC18 recommended a more thorough use of the model ensemble approach to better represent uncertainty for future assessments. Median female SSB in 2020 was estimated to be 1.170 of SSB_{MSY} (80th percentile, 0.570 - 1.776) and is likely (63.5% probability) not in an overfished condition relative to MSY-based reference points. Recent annual F ($F_{2017-2019}$) is estimated to be below F_{MSY} and overfishing is very likely (91.9% probability) not occurring relative to MSY-based reference points. The base case model results show that there is a 61.9% joint probability that NP blue shark stock is not in an overfished condition and that overfishing is not occurring relative to MSY-based reference points.

10. North Pacific striped marlin (*Kajikia audax*)

The SC18 concurred with the ISC22, which reviewed new modelling and data improvements for the Western and Central North Pacific Ocean striped marlin (WCNPO MLS) stock and concluded that this report is a work in progress, but new stock status and conservation and management advice was not available. SC18 stated it looks forward to the ISC BILLWG workplan to explore the growth curve and complete a benchmark WCNPO MLS assessment for approval at ISC23. SC18 agreed that the Conservation and Management advice for North Pacific striped marlin will be carried forward from 2019.

11. Peer review for 2020 WCPO yellowfin tuna stock assessment

An in-person peer review workshop was successfully convened during 7-13 September 2022 at SPC in Noumea, and the results would be initially considered through the online discussion forum later in 2022. Then, the results would be discussed at the 2023 Pre-Assessment Workshop, and the final peer review outcomes would be presented at SC19.

MANAGEMENT ISSUES AND HARVEST STRATEGY DEVELOPMENT

12. SC18 reviewed development of the skipjack harvest strategy framework.

1) Skipjack tuna TRP analyses

Reviewing the deterministic outputs in the SC18-MI-WP-09 (*Further updates to WCPO skipjack tuna projected stock status to inform consideration of an updated target reference point*) and noting the functionality within MULTIFAN-CL for stochastic projections was under development, SC18 recommended that the update of this work be provided to WFCPF19 so that the Commission take appropriate management action to ensure that the biomass depletion level fluctuates around the TRP.

2) Skipjack operating models

SC18 reviewed SC18-MI-WP-01 (*Operating models for skipjack tuna in the WCPO*) and noted that the suite of operating models can be divided into a reference set (the most plausible hypotheses and forms the primary basis for identifying the ‘best’ management strategy) and a robustness set (comprises hypotheses that are considered less likely but still plausible). The performance indicators will be calculated from the reference set whilst the robustness set will be used to give a secondary indication of the performance of the management procedure. SC18 recommended that WCPFC19 adopt the reference set of 96 operating models and provisionally adopt the robustness set of operating models as listed in Table 1 of SC18-MI-WP-01, noting the inclusion of additional uncertainties, which will be further discussed at SC19.

3) Skipjack management procedure

SC18 reviewed the analyses included in SC18-MI-WP-02 (*Evaluations of candidate management procedures for skipjack tuna in the WCPO*). Noting several recommendations and suggestions from CCMs on the candidate MPs, SC18 agreed that the framework necessary for evaluating candidate MPs for skipjack tuna is now fully established and ready for consideration by the Science-Management Dialogue and WCPFC19 for the adoption of an MP on schedule in 2022. SC18, however, did not see that its role was to recommend any particular MP but to furnish the Commission with the tools to do so, and noted the use of the PIMPLE tool for this purpose.

13. SC18 reviewed development of the South Pacific albacore harvest strategy framework

1) South Pacific albacore TRP

SC18 reviewed the information in SC18-MI-WP-04 (*Further analyses to inform discussions on South Pacific albacore objectives and the TRP*), and recommended forwarding this updated working paper to WCPFC19 for its deliberations on alternative TRPs for South Pacific albacore tuna.

2) South Pacific albacore operating models

SC18 reviewed the current grid of OMs as outlined in SC18-MI-WP-05 (*Progress update and technical challenges for the South Pacific albacore MSE framework*), and noted the two alternative sets of operating models (one based on the 2018 assessment with a WCPO area only, and the other based on the 2021 assessment, including the EPO). Noting additional axes be considered on the OM grids, SC18 agreed to specify an OM grid for both options so that there is a clear way forward for this work pending the Commission’s decision.

3) South Pacific albacore management procedures

SC18 reviewed the progress on developing and testing MPs for South Pacific albacore tuna as outlined in SC18-MI-WP-05 (*Progress update and technical challenges for the South Pacific albacore MSE framework*) and recommended that both the Science-Management Dialogue and WCPFC19 take note of the progress to date and that further work is required prior to adoption of an MP.

ECOSYSTEM AND BYCATCH MITIGATION

14. Ecosystem and climate indicators – SC18 recommended that i) “Ecosystem and Climate Indicators” be a standing agenda item, ii) development and testing of “Ecosystem and Climate Indicators” as a project of the Scientific Committee, and iii) available information and updates on the impacts of climate change be included or combined with status of stocks reporting.

15. Shark mitigation measures – SC18 recommended the Commission consider revising the CMM for Sharks, taking into account the results of Project 101 and previous studies, which considered several options including the prohibition of branchlines of wire trace and shark lines to reduce fishing mortality on oceanic whitetip shark and silky sharks in the WCPO.

FUTURE WORK PROGRAM AND BUDGET

16. SC18 recommended the proposed work program and budget for 2023 and indicative budget for 2024 – 2025 together with CCM’s priority scores to the budgeted projects in Table WP-01 to the Commission.

Table WP-01. Recommended Future Work Program and Budget for 2023 – 2025. Average score is based on Table WP-01 (SC project scoring table) of the SC17 Summary Report, with priority rankings: 6&9 = High; 3&4 = Medium; 1&2 = Low. ‘No. CCMs’ represent the number of CCMs which provided scores on that project.

| Project Title | 2023 | 2024 | 2025 | Notes | Avg. Score | No. CCMs |
|--|------|------|------|-------|------------|----------|
| Sub-item 1. Scientific services | | | | | | |

| | | | | | | |
|--|---------|-----------|-----------|---|-----------|----|
| SPC-OFP scientific services | 981,112 | 1,000,734 | 1,020,749 | Budget: 2% annual increase | essential | |
| Sub-item 2. Scientific research | | | | | | |
| SPC Additional resourcing | 176,670 | 180,204 | 183,808 | Budget: 2% annual increase TOR: MFCL work | essential | |
| P35b. WCPFC Pacific Marine Specimen Bank | 105,268 | 107,373 | 109,520 | Budget: 2% annual increase | essential | |
| P42. Pacific Tuna Tagging Program | 730,000 | 730,000 | 730,000 | Responsibility: SPC | essential | |
| P60. Purse seine species composition | | | | Responsibility: SPC Carry over 2021 budget of \$40K to 2023 | | |
| P65. Peer review of yellowfin modeling | | | | Responsibility: SPC (On-going) | | |
| P68. Seabird mortality | 25,000 | 40,000 | | Responsibility: SPC Indicative budget approved at WCPFC18 | 4.5 | 22 |
| P90. Length weight conversion (WCPFC17 endorsed the extension of P90 to 57 months until Sep. 2023) | | | | Responsibility: SPC (On-going) | | |
| P100c (=P17X3). Preparing WCP tuna fisheries for application of CKMR methods to resolve key SA uncertainties. (Duration: 2023 - 2025) | | | | Responsibility: SPC Funding: WCPFC, SPC, EU, IATTC and CSIRO Budget (matching fund) approved at WCPFC18 | | |
| P108. WCPO silky shark assessment | 50,000 | 50,000 | | Indicative budget approved at WCPFC18 | 6.2 | 23 |
| P109 - Training observers for elasmobranch sampling | | | | Responsibility: SPC (On-going) | | |
| P18X1 (=P17X1). Billfish Research Plan 2023 - 2027 | 55000 | | | Responsibility: SPC Indicative budget approved at WCPFC18 | 7.0 | 22 |
| P18X2 (=P17X4). Further development of ensemble model approaches for presenting SA uncertainty | 30,000 | | | Responsibility: SPC Indicative budget of \$20K approved at WCPFC18 | 7.9 | 21 |
| P18X3. Improved coverage of cannery receipt data for WCPFC scientific work | 35,000 | 60,000 | 35,000 | Responsibility: SPC | 7.4 | 22 |
| P18X4. Exploring evidence and mechanisms for a long-term increasing trend in recruitment of skipjack tuna in the equatorial Pacific and the development and modelling of defensible effort creep scenarios | 20,000 | | | Responsibility: SPC | 7.6 | 21 |
| P18X5. Ecosystem and Climate Indicators | 0 | | | Budget to be requested for 2024 and beyond | 7.2 | 19 |
| P18X6. Pacific silky shark assessment (inclusion in the Project 108) | 0 | 30,000 | | Project 108: WCPO Project 18X6: Pacific-wide | 4.5 | 22 |
| P18X7. Pacific whale shark assessment | 85,000 | | | | 3.0 | 22 |
| P18X8. Shark Research Plan mid-term review | 30,000 | | | | 6.2 | 22 |

ADMINISTRATION ISSUES

17. SC18 made no nominations to fill the vacancies for SC Vice-Chair, Management Issues Theme Co-Convener, and Ecosystem and Bycatch Mitigation Theme Co-Convener. Nominations for these positions would remain open until WCPFC19.

18. SC18 recommended to the Commission that SC19 would be held from 16 – 24 August 2023, and that Palau would confirm to the Commission at WCPFC19 whether it was able to host SC19.