



**SCIENTIFIC COMMITTEE
FIFTEENTH REGULAR SESSION**

Pohnpei, Federated States of Micronesia
12-20 August 2019

**ISSUES ARISING FROM THE COMMISSION
(SC14 and WCPFC15)**

WCPFC-SC15-2019/GN-IP-03

WCPFC Secretariat and SPC-OFP

**ISSUES ARISING FROM SC14
(Report paragraphs indicated below)**

| Issues | References | Outputs/Comments |
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| Data gaps | 62. SC14 recommended that the Scientific Services Provider include a table listing the observer data collected by small island developing state (SIDS) observer providers in future versions of the ST Information Paper “Status of ROP Data Management” | SC15-ST-IP-02 (Status of observer data management) |
| | 68. SC14 recommended that the future work proposed by the Scientific Service Provider under Project 60 (Improving purse seine species composition) continue over the coming two years. | SC15-ST-WP-02 (Improving purse seine catch composition estimates: Project 60) |
| | 83. SC14 recommended that the Scientific Services Provider continue the work on purse seine and longline bycatch estimates, and provide updates every 2-3 years. 85. SC14 recommended that the bycatch estimates (from SC14-ST-WP-03) also include the estimates of uncertainty (e.g. CVs) in the next iteration of this work, and consider alternative better estimates where appropriate. | Consistent with the requested timescales, estimates will be supplied through data gaps paper, either in 2020 or in 2021 – subject to discussion at SC15 |
| | 86. SC14 recommended that the Scientific Services Provider reconcile the names and codes of some species of sharks included in their databases. | SC15-ST-WP-01 (Scientific data available to the WCPFC) |
| | 87. SC14 recommended that the differences in coverage of longline observer data presented in some SC14 papers be investigated by Scientific Services Provider and reported to SC15. | <ul style="list-style-type: none"> • SC15-ST-WP-01 (Scientific data available to the WCPFC) • SC15-ST-IP-02 (Status of observer data management) |
| | 91. SC14 recommends that the Scientific Services Provider be tasked with a | SC15-ST-WP-03 (Update : Better data on fish weights) |

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| | project to design and coordinate the systematic collection of data for <u>conversion factors</u> on relevant species to better inform catch estimation, and agrees its inclusion in the SC future work programme and budget under Project 90. | and lengths for scientific analyses) |
| Electronic Reporting | 108. SC14 recommends that FFA, PNA Office, the Scientific Services Provider and WCPFC Secretariat jointly work on a project to review the Commission's data needs and collection programmes (Project 93). | SC15-ST-WP-04 (Update on Project 93: Review of the Commission's data needs and data sources, including the potential for eMonitoring to address gaps) |
| Bigeye tuna | 183. SC14 recommended that the following research issues need to be addressed: 1) Two different growth models separated at 150°W effectively means that Pacific BET should be assessed as a two-stock resource between the WCPO and EPO. However, catch information indicates that the fishing grounds near 150°W are a core area of BET catch, thus influencing the assessments of both the WCPFC and IATTC. Also, tagging information suggests movement of BET between the WCPO and EPO. Therefore, the appropriateness of delineating the two stocks at 150°W needs to be investigated. | Specific plans may be considered at SC15 |
| | 2) The updated new growth analysis suggests area variant growth across the Pacific. While the level of variation is seen to be relatively small within the WCPO (and possibly within the margins of observation error), there is a suggestion of substantial change in growth around the boundary between the WCPO and the EPO (c.f. Figure 14 in SC14-SA-WP-01). The reasons for this suggested change in growth remains unknown, but SC14 noted the utility of collecting more information from the regions either side of this boundary to inform a greater understanding of possible changes in growth around this area. While the incorporation of area-variant growth within the assessment model would also help explore this issue, SC14 noted the difficulty of this task. | <ul style="list-style-type: none"> • SC15-SA-IP-02 (Developments in the MULTIFAN-CL software 2018-2019) • SC15-SA-WP-02 (Project 94 - Workshop on yellowfin and bigeye age and growth) <p>Further consideration may be available at SC15</p> |
| | 3) SC11 concluded that the stock status of WCPO BET from the Pan-Pacific assessment and the WCPO-only assessment were similar when the growth models were similar in the EPO and WCPO. This conclusion needs to be revisited in light of the different growth between EPO and WCPO by adopting the new growth. | Specific plans may be considered at SC15 |
| | 184. The following additional research activities were also recommended by SC14 in order to improve the understanding of the age and growth of BET across the Pacific: 1) A WCPO growth model based on size composition and tagging data, as well as the use of additional modeling approaches (e.g., length-conditional), should also be evaluated. | <p>SC15-SA-IP-02 (Developments in the MULTIFAN-CL software 2018-2019)</p> <p>Further consideration may be available at SC15</p> |
| | 2) Collaboration with the IATTC to analyze bigeye growth from otolith and tagging data collected across the entire Pacific, to better characterize the apparent regional difference in growth between the WCPO and EPO, and possible environmental determinants of such differences. | SC15-SA-WP-02 (Project 94 - Workshop on yellowfin and bigeye age and growth) |

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| | 3) Analyzing the same otoliths by different laboratories, to build confidence in ageing estimates and to estimate ageing error. | SC15-SA-WP-02 (Project 94 - Workshop on yellowfin and bigeye age and growth) |
| | 4) Continued development of a high-confidence tagging dataset for growth analysis, with particular focus on larger bigeye tuna and events with reliable measurements at release. Such data would assist with the validation of the age estimates of large bigeye in the WCPO, and could potentially be incorporated directly into the assessment model as an additional data set. However, a reliable measurement of both length at release and recapture are necessary to accurately estimate incremental growth. | Specific plans may be considered at SC15 |
| | 5) Collect otoliths of very small bigeye that are captured by the Indonesian, Vietnamese, and Philippines domestic fisheries in region 7 and estimate age through daily ring counts to aid in the estimation of the size at age-1 q_{tr}^{-1} parameter (L1) within the assessment model. | Specific plans may be considered at SC15 |
| Yellowfin tuna | 198. SC14 reviewed the work on age and growth of yellowfin tuna presented in SC14-SA-WP-13 and noted that the final results of this projected will be presented to SC15. SC14 encouraged analysis of the same otoliths by different laboratories, to build confidence in ageing estimates through inter laboratory daily-annual age workshop. | SC15-SA-WP-03 (Analysis of age and growth of yellowfin tuna in the Pacific: Project 82) |
| Skipjack tuna | 213. SC14 discussed a proposal for an alternative regional structure to be considered in the next skipjack stock assessment (SC14-SA-WP-04) and recommended that the pre-assessment workshop consider how this proposal might be included in the next assessment. | <ul style="list-style-type: none"> • SC15-SA-IP-01 (Report from the SPC pre-assessment workshop, Noumea, April 2019) • SC15-SA-WP-11 (A conceptual model of skipjack tuna in the Western and Central Pacific Ocean (WCPO) for the spatial structure configuration) • SC15-SA-WP-05 (Stock assessment of skipjack tuna in the western and central Pacific Ocean) |
| | 214. SC14 supports an ongoing tagging program for skipjack tuna to ensure a reliable indicator of skipjack tuna abundance in the stock assessment. | SC15-SA-WP-05 (Stock assessment of skipjack tuna in the western and central Pacific Ocean) |
| | 215. SC14 recommended that the Scientific Services Provider continue research on standardizing purse seine CPUE for use in the assessment. | SC15-SA-IP-05 (Standardized CPUE for skipjack tuna <i>Katsuwonus pelamis</i> from the Papua New Guinea archipelagic purse seine fishery) |
| Pacific bluefin tuna | 266. SC14 advises the Commission to note the current very low level of spawning biomass (3.3% B_0), the current level of overfishing, and that the projections are strongly influenced by the inclusion of a relatively high but uncertain recruitment in 2016. The majority of CCMs recommended a precautionary approach to the management of Pacific Bluefin tuna, especially in relation to the timing of increasing catch levels, until the rebuilding of the stock to higher biomass levels is achieved. | <ul style="list-style-type: none"> • NC14 did not increase catch levels and the Commission adopted a revised CMM for Pacific Bluefin Tuna in December 2018. • NC15 will review the results of ISC's projections of harvest scenarios shown in Attachment E of the NC14 Summary Report to achieve initial and 2nd rebuilding targets in accordance with paragraph 2.1 of HS 2017-02. |
| Designation of NP blue shark and NP | 319 and 380. Regarding the issue of the designation of NP blue shark and NP striped marlin as northern stocks (WCPFC14 Report, Para 378), SC14 provides | <ul style="list-style-type: none"> • NP striped marlin – The Commission noted that it was unable to agree on the designation of North |

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| striped marlin as northern stocks | <p>the following recommendations:</p> <ol style="list-style-type: none"> 1. SC14 recommends that the Commission clarify and quantify what is meant by “<i>mostly north of 20 degrees N</i>”. 2. In relation to paragraph 1, SC14 developed a checklist of benchmark scientific information for the two species to support the Commission’s deliberations in determining the designation of a northern stock. | <p>Pacific striped marlin as a northern stock.</p> <ul style="list-style-type: none"> • NP striped marlin – It was noted that information from SC14 was insufficient, and no other discussions were made at WCPFC15. |
| Whale sharks | 358. SC14 recommends that the WCPFC initiate concerted efforts to identify and promote best practice safe release methods for whale sharks. | <ul style="list-style-type: none"> • WCPFC15 adopted General Principles for the <i>Guidelines for the Safe Release of Encircled Whale Sharks</i> • SC15-EB-IP-02 (Graphics for Best Handling Practices for the Safe Release of Sharks) |
| | 359. SC14 recommends that research be undertaken to quantify post-release mortality rates under a variety of release scenarios. | SC15-EB-WP-02-Rev.1 (Progress on the WCPFC stock assessments and shark research plan – Summary Table) |
| Target reference points | 398. ... SC14 recommended that the analyses be repeated for bigeye tuna taking account of the updated 2018 bigeye stock assessment, and with both ‘recent’ and ‘long term’ recruitment assumptions.... | SC15-MI-WP-01 (Minimum Target Reference Points for WCPO yellowfin and bigeye tuna consistent with alternative LRP risk levels, and multispecies implications) |
| | 404. SC14 also draws the attention of WCPFC15 to the updated assessment for south Pacific albacore reviewed by SC14 (described in SC14-SA-WP-05) which indicates that the current status of this stock is well above the LRP (with the median value of $SB_{latest}/SB_{F=0}=0.52$). To assist CCMs in the identification and evaluation of an appropriate TRP for south Pacific albacore SC14 also recommends that the Scientific Services Provider provides to CCMs an updated analysis using an approach similar to working paper HSW-WP-05 as presented to the WCPFC Harvest Strategy Workshop held in late November 2015. | WCPFC15-2018-10_rev1 (Potential target reference points for South Pacific albacore) |
| SP albacore | 420. ... SC14 recommends that WCPFC15 use this working paper to inform development of the Roadmap for improving south Pacific albacore management and requests guidance from WCPFC15 on 1) the south Pacific albacore fisheries to be included in the MSE (e.g. longline and troll) and 2) the potential management control method for the fisheries (e.g. through catch, fishing effort, etc.). SC14 also recommends that WCPFC15 note the need for ongoing review of monitoring strategy requirements as the harvest strategy develops, ongoing efforts to gather key economic data on the southern longline fishery, and endorse the proposed work plan for development of scientific aspects of a south Pacific albacore harvest strategy. | <ul style="list-style-type: none"> • Refer to paragraphs 207 – 212, WCPFC15 Summary Report • SC15-MI-WP-08 (South Pacific albacore management strategy evaluation framework) |
| Management Strategy Evaluation | 451. ... SC14 noted that several performance indicators that cannot be quantified in the OM can be moved to the monitoring strategy, though it expressed support for the retention of performance indicator PI-5 (to maximize SIDS revenue from resource rents) and recommended that further work be undertaken to identify options to better evaluate this objective.... | <ul style="list-style-type: none"> • WCPFC15-2018-14 (Selecting and Conditioning the Operating Models for WCPO Skipjack) • SC15-MI-WP-03 (Performance indicators for comparing management procedures for South Pacific albacore using the MSE modelling framework) • SC15-MI-WP-05 (Results of Initial Evaluations of |

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| | | Management Procedures for Skipjack) |
| Science and management dialogue | 468 – 473. ... SC14 therefore recommends that WCPFC15 take the necessary steps to establish such a Dialogue in 2019 and consider the draft Terms of Reference provided in Attachment F... | <ul style="list-style-type: none"> • WCPFC15 Summary Report: 327. <i>The Commission agreed to hold a 6-day annual meeting in 2019 with additional time devoted for the Commission to discuss harvest strategies.</i> • SC15 Agenda Item 5.1.4; SC15-MI-IP-08 (Terms of reference for science-management dialogue) |
| FAD management | <p>520. SC14 reviewed information on the estimation of the number of drifting Fish Aggregating Device (FAD) deployments and active FADs per vessel over the period 2011-2018 (SC14-MI-WP-10), noting that purse seine fishing on drifting FADs accounts for about 40% of the purse seine tuna catch in the WCPO. SC14 noted the limitations of the different sources of data used in the analysis but expressed strong support for and the utility of this research. Preliminary estimates of FAD deployments ranged between 30,700–56,900 in 2016 and 44,700–64,900 in 2017 (using combined fishery and PNA FAD tracking data). SC14 also noted that based upon the information provided in the paper, the present per vessel limit of 350 active FADs (at any one time) in the WCPO likely does not constrain or reduce the number of FADs in the water, given that the average vessel at the moment is estimated to have around 117 FADs in the water at any time (assuming the average life of an active FAD is 6 months). However, pointing to the uncertainty of the number of FADs deployed in the WCPO, the identified deficiencies in FAD tracking data, and the differences of the number of active FADs between estimates and the actual operations, some CCMs suggested that the SC continues to provide the further analysis on active FAD number with the additional available data such as improving the FAD data fields to be reported by observers and/or vessel operators.</p> <p>521. SC14 recommends that the Secretariat ensure this working paper is made available to inform the deliberations of the FAD Management IWG meeting to be held in October 2018. SC14 also recommends that the FAD Management IWG and WCPFC15 take into consideration the concerns expressed above and determine a more appropriate limit that (i) helps reduce the amount of marine debris, synthetic pollution and beaching events generated by FAD deployment, and (ii) helps to avoid any economic impacts on the purse seine fishery through reduced CPUE. SC14 also recommends that additional work on these issues be supported, noting that improved data collection in both the observer and logbook records would also assist this research.</p> | <ul style="list-style-type: none"> • WCPFC15 Summary Report: 449. <i>The Commission supported continued involvement by the Commission Chair and the Executive Director in meetings of the Kobe Process Steering Committee, and the participation in a 2019 meeting of the joint tuna RFMO FAD Working Group by the WCPFC FAD-IWG Chair and a member of the WCPFC Secretariat.</i> • SC15- MI-WP-12 (Report on analyses of the 2016/2019 PNA FAD tracking programme) • SC15-EB-WP-13 (Report of the 2nd Meeting of the Joint Tuna RFMOs Working Group on FADs) • FADMO-IWG3-WP-05 |
| Fin to carcass ratio | <p>550. SC14 recommends that:</p> <ul style="list-style-type: none"> • TCC14 and WCPFC15 note that since the adoption of the CMM 2010-07, SC has been unable to confirm the validity of using a 5% fin to carcass ratio and that an evaluation of the 5% ratio is not currently possible due to insufficient or inconclusive information. | <ul style="list-style-type: none"> • Refer to paragraphs 325 and 328 of the TCC14 Summary Report. • Refer to paragraphs 336 – 337 of the WCPFC15 Summary Report regarding shark fins issue within Comprehensive CMM for Sharks and Rays. |

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| | <ul style="list-style-type: none"> TCC14 and WCPFC15 elaborate a mechanism for generating the data necessary to review the fins to carcass ratio if such a ratio is to be used as a tool for promoting the full utilization of sharks in the WCPFC. | <ul style="list-style-type: none"> WCPFC15 Summary Report: <i>340. The Commission tasked TCC15 with considering the outputs of the shark intersessional working group and encouraged interested Members to submit proposals to TCC15.</i> |
| Silky sharks | <p>556. Therefore SC14 recommends to WCPFC15 that:</p> <ol style="list-style-type: none"> The Scientific Services Provider be tasked with reviewing how observers record sharks that are cut free, and what data quality improvements might be achieved through improved observer training and/or protocols. SC14 also recommends TCC14 and WCPFC15 to consider, through the comprehensive shark CMM, a requirement that non-retention and/or unwanted sharks be hauled alongside the vessel before being cut free in order to facilitate species identification. This requirement shall only apply when an observer or electronic monitoring camera is present, and should only be implemented taking into consideration the safety of the crew and observer. When adopted by the Commission, the guidelines for safe release of sharks and rays may be a useful guide for this activity. | On-going and future work |
| Safe release guidelines | <p>566. SC 14 adopted the outcomes of ISG-06 regarding draft safe release guidelines for sharks (Attachment G, SC14 Summary Report).</p> | <p>WCPFC15 Summary Report: <i>341. The Commission adopted the Best Practice Guidelines for Safe Release of Sharks (Attachment J).</i></p> |
| Seabirds | <p>595. SC14 recommends:</p> <ol style="list-style-type: none"> that TCC14 and WCPFC15 note that evidence is available to support the inclusion of hook-shielding devices, specifically Hookpods, on the list of seabird bycatch mitigation options, in addition to already existing mitigation options. the revision of CMM 2017-06 to add the use of hook-shielding devices, specifically Hookpods, as an optional stand-alone seabird bycatch mitigation measure in order to provide more choices and greater flexibility to the fishing industry to mitigate seabird bycatch in their fishing operations. that if hook-shielding options other than Hookpods, or any other innovative options, are proposed for use in WCPFC in the future, SC and TCC should review the evidence on effectiveness, efficiency, and practicality of the technology in mitigating seabird bycatch. that if the revision of CMM 2017-06 to include hook-shielding devices is accepted, SC should be tasked with reviewing information on the use of Hookpods in commercial fishing operations no later than 3 years from the implementation date. that while there was no proposal that hook-shielding devices be made mandatory, if this was proposed in future thorough review by SC and TCC would be required. | <ul style="list-style-type: none"> The seabird measure CMM 2017-06 was revised and replaced by CMM 2018-03 Other recommendations will be further considered at SC15. |

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| | 613. SC 14 recommended that TCC14 and WCPFC15 consider a revision to the southern area of application of CMM 2017-06, including implementation considerations of SIDS and Territories. | |
| Pacific Tuna Tagging Project | <p>652. SC14 recommended that the Commission support the PTTP work plan and associated budget for 2019 and the work plan and associated indicative budget for 2020-2021, noting that it includes consideration of the recent voluntary contribution from the Republic of Korea.</p> <p>653. SC14 noted the advice of the Scientific Services Provider and the PTTP Steering Committee (SC14-RP-PTTP-01) that the availability and cost of suitable tuna fishing vessels to undertake tagging charters is subject to considerable uncertainty. SC14 recommended that should available budget be insufficient or if a suitable pole-and-line vessel makes it impossible to conduct WP5 in 2019 as scheduled in the work plan, the Executive Director may authorize an amendment to the schedule such that CP14 be conducted in 2019 and WP5 be conducted in 2020.</p> <p>654. SC14 also noted the advice of the Scientific Services Provider and the PTTP Steering Committee (SC14-RP-PTTP-01) that there is considerable uncertainty in the long-term sustainability of the tagging programme due to the escalating costs of vessel charter and limited availability of suitable vessels. SC14 therefore recommended that the Finance and Administration Committee and the Commission consider the proposed Project 83, in which it is proposed to assess the business case for the acquisition and operation of a dedicated research vessel for this purpose, with a view to realising cost-savings for the Commission over the long term. However one CCM did not consider that Project 83 was a scientific project and it should be possibly funded under another more appropriate budget line.</p> | <ul style="list-style-type: none"> • Three-year tagging budget was approved by WCPFC15 • Project 83 (Investigating the potential for a WCPFC tag vessel) was not approved. |
| WCPFC Tuna Tissue Bank (TTB) | <p>663. The Scientific Committee reconfirmed that maintaining and enhancing the WCPFC Tuna Tissue Bank (P35b) is an essential project and recommended the Commission support the work plan and associated budget for 2019, and the work plan and associated indicative budget for 2020-2021.</p> <ul style="list-style-type: none"> • The Scientific Committee agreed to run the process of WCPFC Tuna Tissue Bank (P35b) reporting in a similar manner to the PTTP (P42) at SC15. • The Scientific Committee agreed that that the Secretariat and the Scientific Services Provider should work together to investigate any issues arising from the Nagoya Protocol for the Tuna Tissue Bank and provide advice on this matter to the Commission as appropriate. | <p>RP-P35b-01 Rev.1 (Project 35b: WCPFC Tuna Tissue Bank)</p> <ul style="list-style-type: none"> • The first Tissue Bank Steering Committee will be held during SC15. • The WCPFC Secretariat and the Scientific Services Provider will continue to develop protocols and procedures to ensure that the WCPFC TTB remains aligned with the key elements of the Nagoya Protocol |
| Future operation of the Scientific Committee | 684. New Zealand agreed to develop a proposal for consideration by SC15. | SC15-GN-WP-03 (A Proposal for the Guidelines for the SC Chair and Theme Conveners) |

**ISSUES/INFORMATION ARISING FROM WCPFC15
(Report paragraphs indicated below)**

| Issues | References | Outputs/Comments |
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| Target reference points | <p>209. In order to manage the required reduction in catches, the timeline for achieving the interim target reference point shall be no later than 20 years. The Scientific Services Provider is tasked with identifying a range of alternative catch pathways and timeframes that achieve this, for consideration in 2019.</p> <p>210. In undertaking the assessment identified in paragraph 209 information from all fisheries will be included while noting that any management measures must take account of the impact of different gear types.</p> | SC15-MI-WP-02 (Alternative trajectories to achieve the South Pacific albacore interim TRP) |
| | <p>211. The Scientific Committee shall refer to the target reference point in its assessment of the status of the WCPO South Pacific albacore tuna stock and in reporting to the Commission on management advice and implications for this stock.</p> <p>212. Considering that the distribution of the South Pacific albacore stock goes beyond the WCPFC Convention area and the management of this stock is responsibility of both WCPFC and IATTC, WCPFC15 requested the Scientific Services Provider to coordinate with the IATTC scientific staff with the view to consider including the entire South Pacific in future assessments.</p> | Future work |
| Kobe Process | 450. The Commission supported continued involvement by the Commission Chair and the Executive Director in meetings of the Kobe Process Steering Committee, and the participation in a 2019 meeting of the joint tuna RFMO FAD Working Group by the WCPFC FAD-IWG Chair and a member of the WCPFC Secretariat. | SC15-EB-WP-13 (Report of the 2 nd Meeting of the Joint Tuna RFMOs Working Group on FADs) |

ISSUES/INFORMATION ARISING FROM 2018 HARVEST STRATEGY WORKPLAN

| Issues | References | Outputs/Comments |
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| Skipjack tuna | Subject to SC15 agreement of the WCPO skipjack assessment and provision of guidance on required analyses, TRP will be reviewed no later than 2019” – CMM 2015-06. | SC15-MI-IP-09 (Current and projected stock status of skipjack tuna to inform consideration of Target Reference Points) |
| MSE | Review potential options to capture multi-species issues under the harvest strategy process | <ul style="list-style-type: none"> • SC15-MI-WP-01 (Minimum Target Reference Points for WCPO yellowfin and bigeye tuna consistent with alternative LRP risk levels, and multispecies implications) • SC15-MI-WP-04 (Mixed fishery and multi-species issues in harvest strategy evaluations) |