The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

SCIENCE-MANAGEMENT DIALOGUE
THE SECOND SESSION (SMD02)

Electronic Meeting
10:00 – 15:00, Pohnpei Time, 10-12 September 2024

SUMMARY REPORT

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AGENDA ITEM 1 – OPENING OF THE MEETING

1. The meeting was co-chaired by the WCPFC Chair, Josie Tamate, and the SC Chair, Emily Crigler.

2. Josie Tamate, WCPFC Chair, opened the online meeting and asked the delegate from Tonga to provide a prayer.

1.1 Welcome address

3. The WCPFC Chair noted that the regularity of the SMD was still under discussion. Appreciation was expressed to the WCPFC Scientific Services Provider (SSP)[1] for the high-pressure work they had been able to do between the end of SC20 and the start of this SMD. The Commission's Harvest Strategy Workplan scheduled adoption of the Skipjack (SKJ) Monitoring Strategy and South Pacific Albacore (SP-ALB) Management Procedures (MP) for 2024. Although progress to this stage had been slower than expected, including the need for more discussion to be held on recalibrating the SP-ALB interim target reference point (iTRP), the WCPFC Chair noted that this SMD would provide recommendations to the Commission in December on all of these issues.

4. The SC Chair was honoured to be co-chairing alongside the WCPFC Chair and was looking forward to continuing and finalising some of the discussions that started at SC20, and to progressing the decisions that were planned under the Harvest Strategy Workplan. There was a lot to work on this year and the SSP was commended for rising to the extraordinary challenges they had faced this year. Useful outcomes were expected from this SMD that would set up CCMs for the decisions to be made at the end of the year.

1.2 Meeting arrangements

5. The WCPFC Executive Director Rhea Moss-Christian explained the arrangements of the meeting, drew attention to the working papers, and noted that the mid-working-day break had been shortened to 30 minutes after consultation between the co-chairs, to enable the day to finish early and provide time for collation of potential outputs.

1.3 Adoption of agenda

6. SMD02 adopted the agenda for SMD02 (**WCPFC-SMD02-2024-02 Rev 02**).

AGENDA ITEM 2 – OBJECTIVES OF THE SMD02

7. The WCPFC Chair explained that the objective of the first WCPFC Science-Management Dialogue (SMD01) in 2022 was to achieve a consistent understanding among members of the harvest strategy approach (WCPFC-SMD01-2022/BP-01). This SMD02 was intended to be a continuation of these efforts, focussed on further refining the harvest strategies based on the outcomes and feedback from WCPFC20 and SC20. It might involve evaluating the effectiveness of the strategies implemented, discussing new scientific data, and making necessary adjustments to the management procedures.

8. The purpose of SMD02 was intended to advance harvest strategies within the WCPFC, through:

[1] Secretariat of the Pacific Community – Oceanic Fisheries Programme (SPC-OFP).

- Building consistent understanding among all members of harvest strategy's structure, function, and implementation requirements;
- Beginning discussions to prioritize and identify a subset of candidate management procedures, and determining additional work required for further analysis; and
- Discussing both short-term and long-term processes that will aid the Commission's decision-making regarding management procedures and developing a detailed implementation plan and schedule to guide these processes.

9. It was noted that WCPFC20 had outlined a focused agenda for the SMD02 in 2024 (Para 263, WCPFC20 Summary Report). The key areas of focus would be:

- South Pacific albacore management procedures, including a review of the iTRP
- Development of TRPs for bigeye and yellowfin tuna
- Application of the skipjack management procedure
- Capacity building for CCMs, facilitated by the SSP, which will be included throughout the whole SMD02.

10. SMD02 noted the purpose of the SMD02 as well as the key areas of focus for SMD02 in 2024 set out in paragraph 264 of the WCPFC20 Summary Report_Rev01.

AGENDA ITEM 3 – BACKGROUND INFORMATION

3.1 WCPFC approach to Harvest Strategies

11. Reference documents useful under this agenda item included:

- Updated workplan for the adoption of Harvest strategies under CMM 2022-03 (formerly CMM 2014-06)
- Harvest Strategy Development for SP Albacore, Skipjack, Bigeye, and Yellowfin Tunas (WCPFC20-2023-14_Rev1)
- Information and Data Requirements to Support Management Decisions for SP Albacore, Skipjack, Bigeye, and Yellowfin Tunas (WCPFC20-2023-18)

12. Robert Scott (SSP) introduced participants to the WCPFC Harvest Strategy Approach, describing general concepts and progress in the development of WCPFC Harvest Strategies to guide decision-making in fisheries management to ensure the long-term sustainability of fish stocks. The WCPFC's approach to harvest strategies included developing management objectives, performance indicators, and reference points.

13. The main concept was to move away from a short-term reactive decision-making process towards a longer-term proactive decision-making process to achieve defined management objectives, based on the status of the stock.

14. He explained the various components of a WCPFC Harvest Strategy:

- Management Objectives – What do you want from your fishery?
- Performance Indicators – Quantitative metrics
- Reference Points and Risk Levels

  - Targets: Where do you want to be?
  - Limits: Where do you NOT want to be?
  - Risk: How much do you not want to be there?
- Management Procedures – Pre-agreed rules to manage the fishery
- Management Strategy Evaluation – Simulation testing of HCRs to select the "best performing"
- Monitoring Strategy – Is the selected HCR performing as you would expect?

15. He noted that both the SKJ and SP-ALB TRPs were considered interim, because their performance was being evaluated under operational conditions before becoming binding. He also noted that TRPs had not yet been agreed for bigeye tuna (BET) and yellowfin tuna (YFT).

16. The last component – the Monitoring Strategy – looked at a number of different aspects of the performance of the MP, including a compliance issue (was the MP being implemented as expected), and the role of periodic stock assessments.

17. The work planned for 2024 under the Harvest Strategy Workplan was explained, along with the decisions that were expected under the workplan in December.

WCPFC Harvest Strategy Workplan (2024)

	South Pacific	S	B	Y
2024	**Develop management procedures (e)** **a**nd **Management strategy evaluation (f)** • SC agree the operating models for MSE. • SC provide advice for review Target Reference Point • SC provide advice on performance of candidate management procedures. • SC provides advice on relevant elements of the monitoring strategy(d). • TCC consider the implications of candidate management procedures. [Updated stock assessment considered by SC20] **Commission review and adopt a management procedure.** [2]	[SC consider multispecies aspects of WCPO harvest strategies and implications for the monitoring strategy] SC provides advice on the monitoring strategy. **Commission adopts the monitoring strategy(d)**	**Develop management procedures**(e) and **Management strategy evaluation**(f) [Continue development of mixed fishery framework] • SC provide advice on potential Target Reference Point. • SC provide advice on performance of candidate management procedures. **Agree Target Reference Point (b).** • Commission agree a TRP for bigeye	**Develop management procedures**(e) and **Management strategy evaluation**(f) [Continue development of mixed fishery framework] • SC provide advice on potential Target Reference Point. • SC provide advice on performance of candidate management procedures. **Agree Target Reference Point (b).** • Commission agree a TRP for yellowfin.

[2] The Commission recognised that there are technical considerations that may delay this MP adoption by one year to 2025 with delays to subsequent decisions.

18. The SP-ALB information that needed to be considered in the development of the MP had been delayed by the problems in completing the SP-ALB Stock Assessment before SC20, but more material had now been made available by the SSP for consideration in this SMD02.

3.2 Outputs from the SC20 Management Issues Theme Session

19. The SC Chair, who was also the SC20 Management Issues Theme Convenor, presented SMD02-2024-BP-03, which explained SC20's outputs and how they related to the issues under consideration at SMD02.

20. There was no further discussion following this explanation

21. SMD02 acknowledged the work of the Scientific Services Provider (SSP) provided to date and the work of the Scientific Committee (SC) as presented by the SC Chair and Management Issues Theme Convener.

AGENDA ITEM 4 – SOUTH PACIFIC ALBACORE

22. Reference documents for this agenda item included:

- Trends in the South Pacific albacore longline and troll fisheries (SC20-SA-IP-07)
- Review of CMM 2015-02: South Pacific Albacore and Summary of Reporting to WCPFC (WCPFC-TCC20-2024-IP06)

4.1 Cooperation with IATTC

23. Under this agenda item, SMD02 considered areas for potential cooperation with the Inter-American Tropical Tuna Commission (IATTC) in managing the SP-ALB stock and fisheries Pacific-wide, as requested under the following WCPFC decision recorded in the WCPFC20 Summary Report_Rev01:

> *268. Noting the importance of the application of compatible measures between WCPFC and IATTC to enhance the effectiveness of collective conservation and management efforts, the Commission agreed to invite representatives from the IATTC Secretariat and CPCs[3] as appropriate, to participate as observers in SMD02.*

24. The WCPFC Secretariat reported on a virtual meeting held between the WCPFC and IATTC Secretariat staff in late July, which included discussions and a commitment to strengthen collaboration on management of SP-ALB.

25. Graham Pilling (SSP) explained key areas where SPC had been collaborating with IATTC, including the South Pacific-wide stock assessment.

26. Juan Valero of IATTC acknowledged the work on SP-ALB that had been presented to the IATTC Science Committee in June. The IATTC annual session last week had made a resolution on SP-ALB, including a horizon of 2026 for bringing proposals for reference points and a harvest strategy to the

[3] "CPCs" are IATTC Parties, co-operating non-parties, and co-operating fishing entities or regional economic integration organizations. This is equivalent to the WCPFC term "CCMs" which is comprised of Members, participating Territories, and cooperating non-Members.

Commission.

27. Brad Wiley of IATTC explained that the Resolution adopted by the IATTC Commission the week prior to SMD02 was not yet available on the WCPFC website, but included a directive to work towards developing iTRPs for SP-ALB that would be compatible with the outcomes of the WCFPC process, and which also provided explicit direction for IATTC scientists to work with WCPFC and the SSP on this, including to participate in this SMD02 meeting. Data collection would also be addressed to implement the IATTC Resolution, as well as operational logbook data – although this latter data source was broader than for just albacore. This would enter into force on January 1st, 2025.

28. The USA was pleased to see ongoing coordination between the WCPFC and IATTC secretariats and they supported coordinated management of SP-ALB between the two commissions. They noted the need for collection and sharing of genetic samples across the South Pacific, particularly in the southern part of the IATTC Convention Area. The USA suggested that the Commission task the Secretariat to engage IATTC on supporting the SSP with gaining access to, or collection of genetic samples of SP-ALB from the southern part of the IATTC Convention Area.

29. Canada was also happy to hear about trans-Pacific cooperation on this issue and felt that management measures must be compatible across the whole fishery for any Harvest Strategy to be successful. Canada was happy with the IATTC resolution on working together with WCPFC.

30. China thanked all for the educational presentations. In this IATTC-WCPFC collaboration, one significant issue to be clarified was the question of how to deal with attribution of the SP-ALB catch in the WCPFC/IATTC overlap area, since it was not always clear which flag CCMs attributed this catch to which RFMO. China attributed overlap area catch to WCPFC, and hoped there would be no double-counting of catch between the two commissions. China also noted that WCPFC had adopted an iTRP last year to reduce catch by 4% from 2014-17. But the EPO catch for the reference year was actually 35% lower than the average catch in that region and this was very unfair for IATTC, which had to reduce by 35% while WCPFC only reduces by 4%. China noted that the IATTC SC was in May/June and WCPFC SC was in August, so the data summary for the EPO was always one year later than WCPFC, and this needed to be addressed in the collaboration.

31. Japan felt the harmonised approach between east and west Pacific Ocean was quite important for these species, and this had already been established for Pacific bluefin tuna (PBF) where there was a joint working group (JWG). South Pacific albacore also migrated widely across the South Pacific. This was why IATTC CPCs had encouraged the IATTC Secretariat to attend this SMD02 meeting, and the feedback from the ongoing collaboration would be reported to the WCPFC and IATTC scientific meetings in 2025. Japan also agreed with China that management measures and harvest strategies needed to be harmonised between WCPFC and IATTC to avoid unfairness between management measures for SP-ALB in the east and west Pacific Ocean. A Harvest Strategy covering the fishery on the western side of the Pacific could be the first step in the management of this important species.

32. The Cook Islands found some of the comments under this agenda item had been useful and informative. The comments by the USA on tasking the Commission to liaise with IATTC on albacore sampling was a very useful proposal and this was supported. And the point by China about looking at the data in the overlap area was important, and the Cook Islands was pleased to see that there was going to be some work on getting more detailed EPO data. Clearly the scheduling of scientific and commission meetings would also need to be considered so both organisations were able to consider data from the same time-period.

33. After discussion of a proposed text to capture action items arising out of this discussion about IATTC-WCPFC collaboration, SMD02 agreed to the following output for consideration by the Commission at WCPFC21 in December.

34. SMD02 welcomed the efforts made by the WCPFC and IATTC Secretariats for greater cooperation and coordination between them and between the SSP and IATTC, especially with respect to South Pacific albacore (SP-ALB), to ensure compatibility between measures adopted by the two RFMOs.

35. SDM02 supported continuing discussions between the Secretariats to improve coordination, including with respect to ensuring accurate counting of catches in the overlap area; alignment of management decisions to ensure compatibility; and harmonizing the timing for the submission of data and information to relevant WCPFC and IATTC meetings.

36. SMD02 noted the SC20 Recommendation on the need for the collection and sharing of SP-ALB genetic samples across the South Pacific and requested that discussions take place between the two Secretariats on supporting the SSP in accessing or genetic sampling of SP-ALB in the southern IATTC area.

37. SMD02 agreed on the value of a joint working group (JWG) process between WCPFC CCMs and IATTC CPCs to harmonize management measures for SP-ALB and invited the Commission to consider the establishment of such a JWG.

4.2 Review of iTRP

38. The WCPFC Chair noted that SC19 had recommended that WCPFC20 review a list of candidate TRPs as outlined in the document SC19-MI-WP-03 ("*Update to further inform discussions on South Pacific albacore objectives and the TRP"*). The recommendation was to consider adopting a TRP for SP- ALB that was based on a set of reference years rather than a specific level based on biomass depletion percentage. Subsequently, at WCPFC20, after discussions in a small working group, the Commission agreed on an iTRP for SP- ALB. This iTRP was specified as 0.96 $SB_{2017\text{-}2019}/SB_{F=0}$[4], to maintain the SP-ALB stock around this level on average when implementing a management procedure. It was also noted that this iTRP would be subject to review following the 2024 stock assessment and the further development of candidate management procedures.

39. WCPFC20 had also tasked the SSP to evaluate a range of alternative candidate SP- ALB TRPs between $SB/SB_{F=0}$ = 0.42 and $SB/SB_{F=0}$ = 0.56 (long-term average $SB/SB_{F=0}$ (WCPF-CA), or preferably equivalent levels defined in terms of a reference period) that could be considered in the context of the review of the adopted iTRP.

[4] Technical definitions:
"Spawning potential depletion" refers to the estimated South Pacific albacore spawning potential as a percentage of the estimated spawning potential in the absence of fishing (i.e., the unfished spawning potential). The metric is dynamic and is estimated for each model time step.
The method to be used in calculating spawning potential in the absence of fishing ($SB_{F=0}$) shall be:

1. $SB_{F=0,\ t1\text{-}t2}$ is the average of the estimated spawning potential in the absence of fishing for a time window of ten years based on the most recent South Pacific albacore stock assessment, where t1=y-10 to t2=y-1 where y is the year under consideration; and
2. The estimation shall be based on the relevant estimates of recruitment that have been adjusted to reflect conditions without fishing according to the stock recruitment relationship.

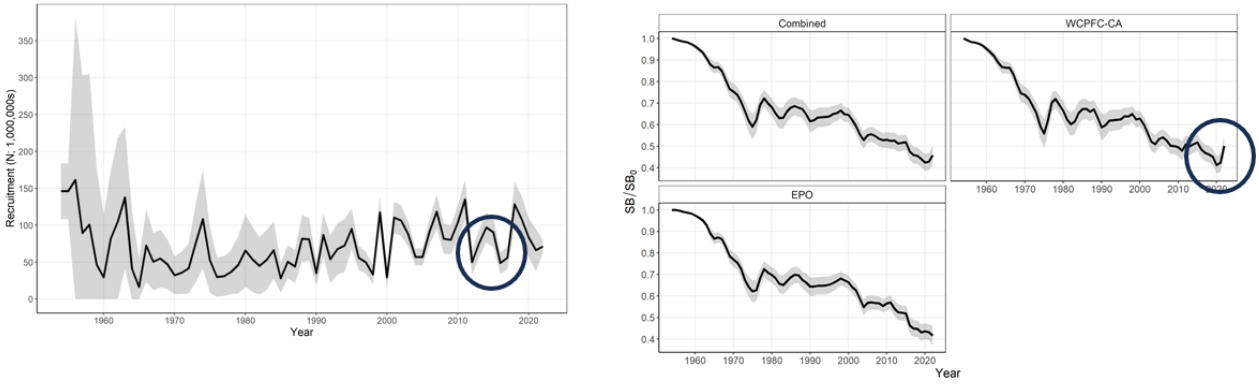
40. The SSP had presented the preliminary results of WCPFC20 requests at the SC20 (SC20-MI-WP-03) and advised SC20 to review the recalibrated iTRP depletion value and its implications for fishing levels, alternative depletion levels, and management actions while requesting guidance on the methodology for longline catch-based projections.

41. SC20 had recommended that both catch numbers and catch weight be evaluated as the basis for projections to support the review of the interim TRP for SP- ALB, and advised the SSP to present outcomes for vulnerable biomass for key fleets and, for WCPFC21, to perform analyses that related to catches at 2017-2019 levels.

42. SMD02 was expected to further review the progress made since SC20 and to provide recommendations to the Commission for the adoption of an interim TRP for SP- ALB.

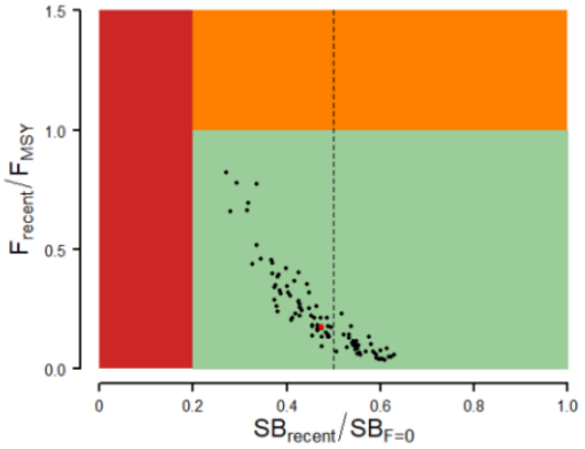
43. Graham Pilling presented the SSP's work on the iTRP and also provided a summary of the 2024 assessment because that assessment had provided the basis for the recalibration of the iTRP. One of the major differences with recent SP-ALB assessments had been to move back to a simpler spatial structure, with just two regions – S-WCPO and S-EPO.

44. The recruitment trend (shown in the left-hand plot below) suggested a period of low recruitment 2012-2016 which appeared to be linked to the dip in the depletion trend in the western and central South Pacific around 2020 with a subsequent recruitment spike being linked to biomass recovery by 2022. The EPO did not show a similar recovery.



Diagnostic case model results

45. The management advice was summarised in a Majuro Plot as follows:



- $SB_{recent}/SB_{F=0}$ is above the LRP (median = $0.48SB_{F=0}$)
- $SB_{recent}/SB_{F=0}$ is just below the TRP
  - (Spoiler alert for recalibrated TRP value…)
- F_{recent} is below F_{MSY} (median F_{recent}/F_{MSY} = $0.18SB_{F=0}$)
- Not overfished (0% < LRP)
- Not subject to overfishing (0% > F_{MSY})

SP-wide results (due to F_{MSY}) for the 100 model outputs

46. After evaluating the implications of the range of depletion levels requested by WCPFC20 (0.42 – 0.56 $SB_{F=0}$) on recalibrating the iTRP, using the approach requested by WCPFC20, the resulting iTRP was estimated to be 50% of $SB_{F=0}$

    "0.96 x median of mean($SB_{2017}/SB_{F=0,2007-2016}$, $SB_{2018}/SB_{F=0,2008-2017}$, $SB_{2019}/SB_{F=0,2009-2018}$) from each assessment run"

47. However, at the iTRP, under the new stock assessment the longline-vulnerable biomass would be about 27% less than 2017-2019 levels, despite the iTRP still being at the same level as before the recalibration. He explained that this was a very different stock assessment from the previous one – selectivity was quite different and the relationship between adult biomass and vulnerable biomass was therefore different. He also noted that the projections were assuming constant catch, even if the biomass dropped close to the limit reference point. In real life, operation of the management procedure would have reduced the catch or effort if the stock approached the LRP, as a result of the Harvest Control Rule.

48. Fiji said that FFA CCMs wished to maintain the use of both weights and numbers in the SP-ALB assessment and projections. They thanked the IATTC for providing their update and for their efforts on a South Pacific albacore Resolution. They noted it provided an initial step towards the development of a harvest strategy for SP- ALB by the IATTC. However, they reiterated their concern about the recent high catches of SP- ALB in the Eastern Pacific Ocean and the assumed catches of 22,500mt for the EPO especially in the absence of a co-management agreement with the IATTC. They felt this highlighted the need for progressing effective engagement between the IATTC and WCPFC secretariats, scientific staff and service providers, and members. FFA CCMs also asked the SSP to evaluate vulnerable biomass estimates relative to recent (2020-2022) levels as part of the iTRP evaluations.

49. Japan noted that last year the Commission had tasked the SSP to work towards a SP-ALB Management Procedure. They felt that the management strategy evaluation should have been based on the effort level rather than catch. The potential HCR was based on catch weight and numbers, but effort was important to managers. They wondered what the background for this

decision was. They also noted that the HCR was based on 25,000t being taken in the EPO but recent catch in the EPO was over 30,000t. Japan wondered how this would be taken into account in the projection outcomes.

50. Graham Pilling explained that one of the challenges facing the SSP was to redo all the Management Strategy Evaluation (MSE) work in accordance with the outputs of the new albacore stock assessment and they had only had two weeks to complete this. The evaluations using effort were planned and still needed to be done, but there had been some technical issues. It was hoped to have these completed in time for the commission. The SSP was not expecting to redo all the iTRP work based on effort but would concentrate on doing what was necessary for the Management Procedure. Regarding the catch increase in the EPO – how the catch data for the overlap area was treated made a difference. The SSP would also be looking at the implications of WCPFC-CA MPs.

51. Tonga made it clear that South Pacific Group (SPG) CCMs supported the use of both weights and numbers in the SP-ALB assessment and projections. They considered that the weight-based analysis was most appropriate for developing SC advice and management of SP-ALB. Weight was a more accurate assessment and followed the precautionary approach which was prudent given all the uncertainties in the assessments and management of SP-ALB. The SPG proposed that WCPFC21 discuss the possibility of holding a WCPFC/IATTC special dialogue meeting or meetings in 2025 on the topic of management of SP-ALB. They were thinking of something similar to what had been done for Pacific bluefin tuna.

52. China went back over the history of the SP-ALB TRP and noted that there had been a time-period allowed for achieving the TRP in previous years, but this now seemed to be absent. And China wanted to know what the reason was for reducing the catch by 16,700t when the stock was still in good shape. China recalled the good outcomes for the industry from the PBF joint work, and hoped the same results might come from this collaboration on albacore. They also wondered what would be the point of the SP-ALB Roadmap meeting next month if many of the SP-ALB discussions were taking place at this SMD. China also had a similar concern to Japan that recent catch in EPO was not being taken into account.

53. Graham Pilling noted that the time-frame for achieving or maintaining the iTRP was now encapsulated in the Management Procedure. He agreed that there had been an increase in catch in the EPO but there was not a direct relationship between the EPO increase and the change in catch needed to achieve the iTRP. Most of these issues could be explained by the change in the assessment. The overlap area was being included in the WCPO and it was only the remainder of the EPO catch being covered by the 20,500t considered here.

54. The Solomon Islands said that PNA+TK CCMs considered that SP-ALB management was one element of managing a multi-species catching fishery under an effort control management system. Establishing a TRP is an important part of that. The information presented to SC20 regarding the drastic drop in NZ troll fishery catch in 2023, and the way the model interprets that information, suggested another “big dip” was on the way. The way forward in their view was to set the iTRP such that it accounted for that outcome. PNA and Tokelau preferred the consideration of both weight and numbers when dealing with projections.

55. The USA recognised the interventions from Japan, China, FFA, and SPG CCMs on establishing a model for joint work between IATTC and WCPFC and would like to provide ideas for that model.

56. The Chair noted the suggestions for further dialogue, and also noted that timing would be a

challenge.

57. SMD02 reviewed a summary of the 2024 SP-ALB stock assessment before the SSP presented WCPFC-SMD02-2024-BP-01 and noted the recent high catches of South Pacific albacore in the Eastern Pacific Ocean. SMD02 generally supported maintaining the use of both weights and numbers in the South Pacific albacore catch-based projections.

4.3 South Pacific albacore management procedures

Reference Document: ***WCPFC-SMD02-BP-02*** *covers the whole of agenda item 4.3*

58. The SC Chair explained that the Commission at WCPFC20 had tasked the SSP to undertake evaluations of some selected candidate management procedures for SP-ALB, where the output of the HCR was total allowable effort and alternatively where the output of the same or similar HCR was total allowable catch.

59. Due to unresolved technical challenges, the management procedure work had not been available in time for SC20. However, SC20 reviewed and adopted the operating model reference set and robustness set for evaluating SP-ALB management procedures while recommending future work to address uncertainties, including the impacts of climate change, effort creep, and stock structure. SC20 also provided technical guidance on the estimation model and the design of management procedure to be evaluated.

60. SMD02 was asked to review the progress made since SC20 and provide recommendations to the Commission focusing on selecting an appropriate candidate MP or a suite of candidate MPs.

4.3.1 Interrogation of performance indicators and identification of preferred outcomes

61. SC Chair explained that Performance Indicators inform the process of identifying a single management procedure or a subset of candidate MPs with desirable outcomes. These indicators were crucial as they quantitatively measured how well each MP met the management objectives. The SMD02 would be able to use these indicators, along with online tools such as SPAMPLE, to guide the selection process.

62. Updated information on the performance indicators for candidate MPs would be available to SMD02, and participants were referred to SC19-MI-WP-06 (*Evaluation of candidate management procedures for South Pacific albacore*) for the conceptual background.

63. Finlay Scott (SSP) presented the indicators and the MSE framework before turning to the management procedures. The Operating Models had been updated to use the 2024 stock assessment. This had a more optimistic outcome than 2021 assessment, and there was no “big dip” at start of the projection. The estimation method for the MPs had been updated and the HCR baseline for current candidate MPs was 2020-2022 catches.

64. The MSE framework had the following assumptions

- Simulations started in 2023 and ran until 2053
- Management Procedure was first run in 2025 and the output first applied in 2026
- For the simulations, the catches in the WCPFC-CA in 2023-2025 were set to mean 2017-2022

    - Could affect output of MP the first time it is called, due to any constraint on how much output can change
- Management period was three years
    - i.e. the catch or effort limits set by the MP were applied for the following three years
- Output of the MP was applied in the following year for the remainder of that management period
    - e.g. when evaluating the MP in 2025 the output fishing levels were applied in 2026-8
- MP output was applied equally to all fisheries (longline and troll) operating within the WCPFC-CA south of the equator
- MP did not apply to fisheries operating in the EPO region of the model
- Total catches of fisheries operating in the EPO model region were fixed at 22,500 mt per annum

65. Performance Indicators were as follows:

- $SB/SB_{F=0}$ (can compare to iTRP and TRP range proposed by WCPFC20)
- Probability of being above LRP
- Catch in the WCPFC-CA (total)
- Vulnerable biomass (catch rate proxy) relative to 2020-2022
- Catch variability

66. It was noted that it would always be possible to change or add to this list of performance indicators, but fewer indicators were probably better. He noted that the model framework limited the kind of indicators that could be used – for example, there was no good economic information available – but it might be possible to use proxies for important indicators of management objectives being met that did not have direct sources of data to inform them.

67. Several ways of visualising the indicators of performance of different HCRs were described, from box-plots and time-series projections to tables of results.

68. A total of 18 candidate management procedures resulted from the 4 HCR shapes combined with the various optional constraints applied to each. He explained that in trying to make a decision about the preferred MP it was important for each CCM to consider what were their main objectives and corresponding performance indicators. And the best approach for selecting candidate MPs was probably to consider if there was a preferred HCR input type (relative or absolute). And then to think about any constraint on how much the output can change (which may be as important as HCR shape), and then focus on the HCR shape itself.

69. It was important to note that the candidate MPs presented here were a 'first pass', and could continue to evolve. There was not a lot of contrast between the candidates, but that was because they had all been set up to try and optimise the state of the indicators. Those who wanted to try their own candidate MPs could try using https://ofp-sam.shinyapps.io/spample/

70. The SC Chair thanked Finlay for walking the meeting through examples of SPAMPLE and opened the floor to discussion. Some things to consider were:

- MSE assumptions
    - Using 'interim' catch level (2023 – 2025)?
    - How to take account of what is happening in the EPO?
    - What fisheries might be managed through the MP and controls?
- Performance indicators
    - Any other PIs?
    - How PIs are expressed, e.g. absolute catches or relative catches?
    - Formats for presentation of results?

71. The Pew Charitable Trusts asked Finlay to say more about the differences between using absolute and relative catches, since a decision now on this could cut the number of options in half. Finlay noted that this was going to be discussed tomorrow. However, his feeling was, when comparing differences between true and estimated levels the relative values tended to give a better result than using absolute values.

72. One-off sensitivity tests on three questions were described. These were:

- Separately setting Troll HCR baseline at 2000-2004 (longline remains at 2020-2022)
- EPO catch set to 15,000 mt (was at 22,500 mt)
- EPO managed through the MP (i.e. compatible measures)

73. New Zealand was not surprised that having a different baseline for the troll fishery didn't make a lot of difference to the outcome of the sensitivity analysis. It was also noted that the 2024 SPA stock assessment treated the impact of troll and longline differently. The graph on page 87 in the 2024 stock assessment report made the different characteristics of the troll fishery clear.

74. China was aware that the period 2020/22 had almost the lowest catch in the entire recent time period and wondered what the reason was for keeping the longline baseline at 2020-2022.

75. The SSP noted that this followed from the work on the TRP evaluations which suggested that continuing to fish at 2020-22 levels would achieve the iTRP in the long term. However, this was at the baseline level and the HCR could cope with a higher level. Baselines were a valid discussion topic, however.

76. Japan noted the Commission had been managing this fishery with a 2000-2004 baseline under the South Pacific albacore CMM. This was a baseline for both the troll and longline fisheries. It might be useful to look at having a similar baseline for the sensitivity test on longline. Japan also noted that albacore can be either a target or a bycatch in South Pacific longline fisheries. If the WCPFC Record of Fishing Vessels (RFV) identifies which longliners have SP-ALB as bycatch and which target SP-ALB, it could be useful to look at these separately under the 2000-2004 baseline. They also noted that longline and troll fisheries weren't the only fisheries taking albacore, and the small-scale and pole and line fisheries also occasionally took South Pacific albacore. Japan considered that it would be interesting to look at the result of exempting these other fisheries from the management procedure and queried whether these three sensitivity-testing scenarios were possible.

77. The SSP explained that there would be a discussion on the last day of the SMD for collecting requests for further work before WCPFC21. It would be challenging to look at target vs bycatch, and this

might fall under the mixed fishery approach anyway. When it came to the exemption of albacore-taking fisheries in archipelagic waters, this had been considered but the possibility of analysis would have to be considered carefully in view of the data limitations.

78. The Cook Islands was concerned that there might be differential treatment or different baselines for different fisheries in the MP, as this suggested indirect allocation. Separate treatment of troll fisheries at a much higher baseline would provide a huge advantage to the troll fishery at the expense of the longline fishery. MPs should work on the whole stock, and not carve out different fisheries, and all discussions with implications for allocation should be treated separately.

79. Australia felt that the results of the EPO baseline sensitivity test were not surprising, but it was possible that the HCR might need to be retuned before it became meaningful.

80. The SSP explained that the sensitivity tests take the same HCR shape and then just change one factor for the test. As well as taking a different baseline it might indeed be necessary to re-tune the HCR for each component to reach the TRP and then do the comparison.

81. Japan asked how the catch was calculated within the MSE. The SMD had discussed how to treat "other" fisheries. Could the SSP explain how the "other" fisheries are treated in the simulation at the moment? Finlay Scott explained that the OM only included the longline and troll catches – which were the majority of the South Pacific albacore catch. The other fisheries were not included in the OM. Only the key fisheries were included, consistent with the skipjack MP which did not include the catch of skipjack by longliners because it was so small. Similarly with the archipelagic other fishery catch of SP-ALB, which was also very small.

82. The USA acknowledged the concern expressed by the Cook Islands about the allocation implications of treating the troll fishery separately, however given the small impact of this on the operation of the Management Procedure, the USA would like to keep the door open for further discussion.

83. SMD02 expressed appreciation for the evaluations undertaken by the SSP of selected candidate Management Procedures for South Pacific albacore (**WCPFC-SMD02-2024-BP-02**).

84. SMD02 supported maintaining all the current performance indicators noting that those focused on vulnerable biomass and catch stability are critical for South Pacific albacore fisheries.

4.3.2 Settings and Assumptions of the MPs

85. The SC Chair introduced this agenda item requesting that the SMD review the outcomes of MP-related discussions and recommendations from previous meetings about the settings and assumptions of the MPs. This could involve:

    a. Defining fisheries and fishery controls within the harvest strategy to ensure they align with the management objectives.

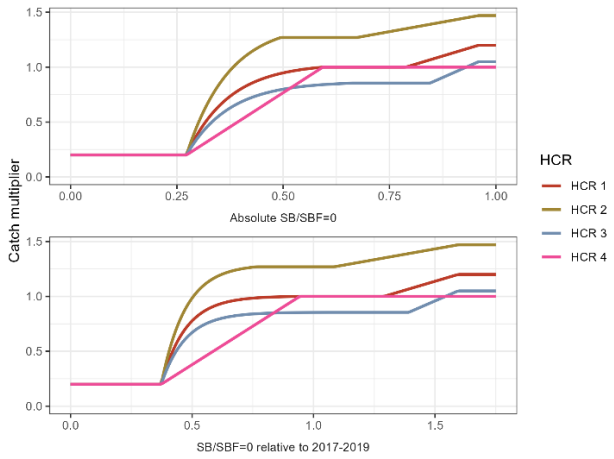
    b. Considering a 3-year management cycle for the MPs, which could provide a balance between responsiveness to stock status changes and stability for fishery operations.

    c. Discussing alternative settings for MPs, which may include different harvest control rules.

86. Finlay Scott (SSP) explained the SP-ALB candidate management procedure assumptions and settings. The assumptions were:

- Data lag of two years;
    - E.g. when evaluating the MP in 2025, data for the EM is available up to and including 2023
- All fisheries managed by the MP (longline and troll fisheries within the WCPFC-CA) being managed by catch limits;
    - (although it is recognised that management by effort limits will also need to be accommodated)
- The HCR of each MP outputting a scalar that is applied to the baseline catch for each fishery group managed by the MP;
- The baseline catch for each HCR, for all fishery groups, being the average WCPFC-CA catch 2020-2022;
    - Output scalar of 1 sets the catch limit for the next management period to the average of 2020-2022 catches
    - TRP evaluations presented to SC20 suggest that 2020-2022 fishing levels will achieve the iTRP
    - In the OMs: Baseline catch is 8% lower than the 2023-2025 catch assumed in the simulations
- All fisheries managed by the MP were affected equally, e.g. if the MP specifies a 10% increase in catch, all fisheries managed by the MP have their catch limits increased by 10% relative to the baseline for the next management period

87. He also explained what the four different HCR examples were designed to do. All four had options for having either an absolute SB/$SB_{F=0}$ depletion ratio input for the HCR, or a relative depletion ratio input (relative to the 2017-2019 average level).



- Output is a multiplier applied to the baseline (2020-2022)
- 4 basic HCR shapes
    - 'skipjack-like', 1 hockey stick
- Two variants of each based on HCR input metric (SC20 guidance):
    - Absolute or relative
    - Relative may perform better but depends on HCR shape too
- Shapes of the HCR have been designed to accommodate bias seen in EM evaluations.
    - Points on x-axis shifted to the right.
    - E.g. LRP = 0.2, on the absolute HCR input the minimum SB/SBF=0 coordinate is 0.27
- Input is from the EM, not the stock assessment

88. Regarding Management Procedure output constraints, it was possible to apply a constraint to the

output of the HCR, i.e. the output could not change by more than X% from the last management period. This provides stability to the industry but may restrict CCM's ability to take appropriate management action if needed.

89. Constraint may be as important as shape of the HCR to the performance of the MP. In the simulations any constraint is applied the first time the MP is called:

- Uses catches in the previous year (2025) to calculate an 'initial scalar', i.e. relative to baseline catch
- Constraint then applied to this initial scalar
- Can affect the performance of the MP the first time it is called because current MSE assumptions are that 2023-2025 catches are set to 2017-2022, 8% higher than baseline of 2020-2022

90. The SSP sought feedback from the SMD on whether absolute or relative inputs to the HCR were preferred, since it would reduce the number of potential candidate MPs. Similarly, there might be a consensus preference for what HCR shapes were preferred, or not preferred, and some preferences for the constraints.

91. Participants were asked to think about their main objectives. For example, a major objective might be to get the stock to the TRP on average. Candidate MPs could continue to evolve following feedback from CCMs.

92. It was emphasised that it was difficult to determine how an HCR would perform just by looking at it. It needed to be tested in context, as part of the MP.

93. Japan noted that the shape of the interim SKJ MP HCR agreed by WCPFC had a threshold set at 0.42. This was the point at which F would need to be decreased. The estimated value of the SKJ TRP at that time was about 50.5% of the official level. So there was some difference between the threshold in the HCR shape and the actual estimated value of the TRP. Japan felt it was acceptable to have some difference. But for this SP-ALB HCR, the threshold was set at exactly the same point as the iTRP and Japan would prefer something more similar to the SKJ HCR where the threshold was set lower, so the TRP would be in the middle of the flat part of the HCR shape. Japan also reiterated their preference for the baseline for the MP to be the 2000-2004 average, like the current South Pacific albacore CMM.

94. Finlay Scott explained that this threshold was derived from the SP-ALB estimation method. This value wasn't coming from the stock assessment and the reference points – it was the value produced by the estimation method. But, as illustrated in the presentation, the shapes of the HCRs had been designed to accommodate the bias that had been seen in estimation method evaluations. It was probably best to look at the combination of HCR shape and evaluation method, but SPC was happy to test any alternative HCRs proposed by CCMs and would take this on board.

95. FFA CCMs noted that there was less variability in the relative estimator compared with the 'true' biomass from the operating models, and that the HCRs that use this relative estimator had better catch stability performance. So FFA Members preferred the use of a relative input over an absolute one.

96. Additionally, FFA CCMs supported a 3-year frequency for running the MP in line with the SKJ MP, the SP-ALB assessment schedule and the biology of SP-ALB. A three-year cycle provided balance between responsiveness to stock status changes and stability for fishery operations.

97. They also supported some percentage change constraints to be included in the MP and supported the use of the "Hillary step" in the HCR design to ensure stability whilst also allowing for an increase in catch when conditions were good.

98. Tokelau, speaking for PNA+TK CCMs had a question relating to the 2020-22 baseline, which was touched on in SMD discussions that took place the day before. In their view that baseline was a lagging indicator. It was based off the estimation model rather than the fishery data, which had been impacted by COVID-19. That implied that the baseline level would drop when the next three years of fishery data was included. There was a disconnect between the baseline chosen versus the iTRP baseline of 2017-2019. Noting that the iTRP is interim and a range of TRPs was being considered, they were interested in the SSP's comment on this observation.

99. PNA+TK also had some specific feedback on the MP design considerations and wanted to raise these for discussion and further work. The current management measure for SP-ALB had been much maligned, however it had been implemented by all CCMs and was working as intended. In terms of settings, they would like to evaluate the impact of the MP not applying to PICTs flags in Fishery 1a, 1b, 1c and 1d specified in the 2024 stock assessment model. This reflected mostly FFA zones and represented how a SIDS exemption would affect the MP application in line with CMM 2015-02.

100. For the HCR parameters, PNA+TK supported a similar hybrid HCR to that of SKJ with the middle of the step at 0.42, the lower end of the step at 0.37 and the higher end of the step at 0.47. This was done to specifically build into the HCR design some precaution against the severe big dip that was assumed to be forthcoming.

101. Finlay Scott noted that the iTRP had a 2017-2019 baseline but that was for the depletion level not the catch level. To achieve those depletion levels, baseline catches would need to be projected forward to 2020-2022.

102. Australia thanked the SSP for its work under difficult circumstances and noted some concerns about the approach being suggested in relation to the MP development. Australia reminded the SMD that, under the plans that the Commission had adopted for SP-ALB there will be two CMMs – the first CMM will define the MP and is scheduled for adoption this year, and the second CMM will contain the implementation arrangements (including issues of catch shares) that is scheduled for next year. This was a very deliberate approach within the Commission's adopted SP-ALB roadmap. The SP-ALB MP should simply set a total fishing level. This would then be implemented through the separate measure that deals with catch and/or effort constraints and the allocation questions.

103. The MP was not the place for making decisions on catch shares and questions of allocation. But Australia was very concerned that some of the interventions yesterday appeared to be taking the SMD in just that direction. They noted the following:

- First: The use of alternative baselines for some fisheries within the MP was effectively introducing allocation into the MP. Australia did not support it.
- Second: The main MP evaluations use a single catch baseline period that is simply a starting point from which fishing can be scaled up and down by the MP. They considered that this baseline period had no relevance beyond its role within the MP, and it was of no relevance what CCM catches in that period were, or to allocation questions. That was a separate matter dealt with outside the MP.
- Australia recognised the importance of making progress on allocation discussions and the

different views put forward by CCMs on appropriate baselines for the MP. However, they strongly encouraged CCMs to stick to the SP-ALB roadmap plan on this matter.

104. SPG CCMs, through Fiji, reaffirmed their preference to the keep the MP simple, inclusive of all catch of SP-ALB south of the equator and without the additional complexities of different reference periods. Simple and straightforward was the best approach.

105. Given that the SMD02-BP-02 paper "Evaluation of candidate management procedures for South Pacific albacore" was posted just before SMD, SPG had not had enough time to fully consider their preferred MP. That said, the two performance indicators that SPG were most focussed on were Vulnerable Biomass and Catch Stability, which were absolutely critical to their fisheries.

106. The USA proposed removing the "absolute" input options at this time and would also support removing HCRs 2 and 3, which should bring the total number of options down from 18 to 5, and would welcome discussion on this. The USA offered to draft a recommendation for SMD02 consideration, if it would be helpful.

107. Graham Pilling (SSP) responded to the PNA+TK intervention on HCR parameters where specific inflexions had been specified. As Finlay Scott had mentioned earlier, these change points had been shifted to the right to accommodate the biases identified in the estimation method. He queried PNA+TK on whether these changes they proposed were meant to apply before the bias had been accommodated, or after.

108. PNA+TK were looking for these to be applied after the bias adjustment was applied. And to respond to the proposal by the USA, PNA+TK would want to retain HCR 2.

109. Finlay Scott said it would also be useful to get an idea of the level of constraint that CCMs wanted, because this would also reduce the number of options.

110. Japan preferred HCR1 with relative inputs and would like to see change points at 0.9 and 1.02 with a 20% change limit.

111. Australia had taken note of the co-chair's call for any other input on SP-ALB, and had some additional thoughts:

- Support for the proposed baseline period 2020-22 (noting their earlier comments that this has no relevance to allocation)
- Support for the proposed transition period assumption (as currently modelled)
- Support for the maximum change rules applying from the first running of the MP (as currently modelled)

112. If there was to be further exploration or consideration of different EPO catch assumptions (such as ~15kt) then Australia would recommend a version of the HCR1 MP that assumes the lower EPO catch, but which has been adjusted to achieve the iTRP through time. This would give a better understanding of the impact of different EPO catch assumptions.

113. SMD-02 supported a 3-year frequency for running the South Pacific albacore management procedure (MP), which is in line with the current skipjack MP, the South Pacific albacore assessment schedule, and the biology of South Pacific albacore, and which balances

responsiveness to stock status changes and stability for fishery operations.

114. SMD02 supported the removal of candidate MPs that use an absolute estimator, and MPs using Harvest Control Rule (HCR) 4, from the set of candidate MPs provided in **WCPFC-SMD02-2024-BP-02**.

4.3.3 Additional work to be conducted by the SSP to support decision-making on MPs

115. The SSP noted that they would have a little capacity to conduct additional analyses to support decision-making processes on SP-ALB MPs before the next Commission meeting (WCPFC21) scheduled to begin in late November. This work would need to be aimed at refining the candidate SP-ALB MPs to ensure they were robust and effective for the management of the South Pacific albacore stock. SMD02 was invited to discuss any further work to be conducted by the SSP to finalize the development and adoption of the SP-ALB MP at WCPFC21.

116. A draft list of new requests for additional scientific analyses arising from SMD02 had been prepared by the SSP and was circulated for comment, noting that the SSP was also engaged in fulfilling requests from SC20 for additional analyses, and that other agenda items at this SMD02 – including the skipjack MP and the bigeye and yellowfin TRPs would also need to be discussed at WCPFC21 and were also likely to generate some requests for additional scientific analysis.

117. Speaking on behalf of the SPG, Fiji noted the draft outcomes for agenda 4.3.3, and proposed that HCRs 1, 2 and 3 should be retained at this stage as they were still considering the suite of candidate management procedures offered. These MPs were also invaluable in consideration of the TRP. They proposed that HCR4 be removed. They understood that this list would be finalised at the end of the SMD and was still open for discussion.

118. The USA suggested directly incorporating SEAPODYM outputs into the operating model grid. They would also want a review of SEAPODYM to see what recommendations of the 2019 review had been incorporated into the modelling platform. Fisheries managers in the USA would benefit from gear-specific catch figures from SPAMPLE to place the MP discussions in the same context as gear-specific catch discussions that were presented each year to the WCPFC. They suggested the data going into SPAMPLE either be made available publicly or on request.

119. PNG for FFA CCMs requested the inclusion of catch and effort variability performance indicators to be evaluated under an effort-based run.

120. SMD02 returned to agenda 4.3.3 on the third day of the meeting for the purpose of prioritising the various additional requests that had arisen throughout the previous two days of discussion, and which had been compiled into a table of requested analyses by the Co-chairs, Secretariat, and SSP (see **Table A**, below).

121. Graham Pilling (SSP) explained the table list of requests in Table A, noting that they included as-yet-unfulfilled requests arising from SC20 or WCPFC20 which would take priority. The SSP had estimated how many “science units” (i.e. SSP capacity) were likely to be consumed by each request. The total of the existing SC20 and WPFC20 requests plus the new SMD02 requests added up to 40 units, and this would need to be reduced to 20, which was the limit of SSP capacity available before WCPFC21. The existing priority requests from SC20 and WCPFC20 added up to 16 units, which left only 4 units for the new SMD02 requests.

Table A: Summary of proposed SSP harvest strategy-related analyses arising from SC20 and SMD02 (shaded analyses are those remaining from previous taskings by SC20 and WCPFC20 and which would remain highest priority for the SSP to complete before WCPFC21)

Subject	Requested analysis	Technical feasibility	Science units	SSP Notes
SP-ALB TRPs	1. Perform evaluation setting EPO Catches to 2017-2019 avg levels	OK	2	SC20 request
	2. Present vulnerable biomass outcomes relative to 2020-2022 levels	OK	1	SMD02 request. Note results within SPAMPLE are presented in this way and may be considered sufficient.
SP-ALB MPs	3. Evaluate MPs based upon effort	Medium, currently possible for LL fisheries only	10	WCPFC20 request. Run across the reduced grid of 7 MPs that SMD02 defined.
	4. Evaluate MPs with EPO fishing set at 2017-19 levels	OK	-	Done as a one-off sensitivity for SMD02. Could be used as a robustness test for 'adopted' MP.
	5. Provide VB performance indicator relative to 2020-2022	OK	-	Done for SMD02
	6. Evaluate impact of MP not applying to PICT fleets in 1a, 1b, 1c, 1d	OK	3*	Perform as a one-off sensitivity from HCR1 with a 5% constraint using a relative HCR input. Fishing of the uncontrolled 'PICT' fleets set to 2017-2022 average. **NOTE**: if this were across all 7 MPs, this would be 10 science units. Catch-based MPs only. If also on effort, 6 science units required.
	7. Evaluate baseline of 2000-2004 for all fisheries (LL + TR)	OK	2*	Perform as a one-off sensitivity from HCR1 with a 5% constraint using a relative HCR input. Assuming HCRs are unadjusted from current (output of 1 = 2000-2004). **NOTE**: if this were across all 7 MPs, this would be 8 science units. Catch-based MPs only. If also on effort, 6 science units required.
	8. Consider differential treatment of 'target' v 'bycatch'	Low	N/A	Current OM structure does not allow this to be done in the short term. Definition of 'target' v 'bycatch '

	longline fisheries			fleets would need to be agreed.
	9. Add gear specific catch as additional performance indicators	OK	1	For LL and TR as total, will be presented in the SPAMPLE tables only.
	10. Add catch and effort variability performance indicators under effort-based runs	Medium	3	As request, effort variability include for effort-based runs only (linked to WCPFC20 request above)
	11. Exclude archipelagic waters from the MP control	OK	-	Part of the MSE framework that had not been fully developed in time for SMD02 but will be added.
	12. Evaluate new MP: HCR where threshold level is to the left of the iTRP	OK	2*	Modification of HCR1 with a 5% constraint and relative input into the HCR. Absolute change point at $0.45SB_{F=0}$ will be translated into the relative equivalent. **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.
	13. Evaluate new MP: HCR where change point is at 0.85 and a constraint of 20%	OK	2*	Modification of HCR1 and relative input into the HCR. **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.
	14. Evaluate HCR where Hillary step lies across the range 0.37 to $0.47SB_{F=0}$ after EM bias correction[1]	OK	2*	Modification of HCR2 design with a 5% constraint and relative input into the HCR (see footnote 1). **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.
	15. Make data within SPAMPLE available	OK, dependent upon the format of the data being requested	-	Data underpinning the plots within SPAMPLE are available on request.
BET/YFT TRPs	16. Re-evaluate setting R2 YFT 'miscellaneous fisheries' fishing to more recent levels	OK	4	SC20 request. YFT R2 fishing will be in terms of effort. Implies re-running the 'nuclear grid'.
	17. Re-evaluate setting R2 BET 'miscellaneous fisheries' fishing to	OK	8	Not requested by SC20. YFT R2 fishing may need to be in terms of effort. Implies re-running the 'nuclear grid'. Two recruitment scenarios to be

	more recent levels			evaluated.
		TOTAL:	**40**	

[1] Details for proposed HCR

HCR	Type	$SB/SB_{F=0min}$	$scalar_{min}$	$scalar_{max}$	curve	$step_{min}$	$step_{max}$	height	constraint
2	'Hybrid'	0.2	0.42	1.2	1	0.37	0.47	1.2	5%

Note: Total points do not include specific planned MSE framework developments including the exclusion of archipelagic waters from the MP process, work that has already been deliver to SMD02 or outputs that already exist (items given zero points in the table above.

122. China noted that there were several considerations that needed to be reflected, including the annual catch in the EPO of albacore, which was already greater than 30,000t, and that the joint working group with IATTC on SP-ALB might need to take place before anything could be decided. China also agreed that same baseline for all fisheries was acceptable but in 2002-2004 WCPFC had not been established. The South Pacific albacore CMM capacity limit was based on the level in 2005 but only for the area south of 20°S. There was no effort control by either WCPFC or IATTC for the remaining area, and this needed further work.

123. The WCPFC Chair made it clear that both of these issues – of baselines and of joint WCPFC/IATTC activity - would be considered in the SMD02 outcomes document, and issues pertaining to management controls and allocation would be considered under the next stage of the South Pacific Albacore Roadmap in 2025 – the negotiation of an additional CMM to implement the SP-ALB MP CMM that was planned to be adopted by the Commission at WCPFC21 in December 2024.

124. China clarified their point about the baseline, which in the South Pacific albacore CMM had been changed from year to year. They understood that this was not about allocation, but China needed to know what the implications of these baseline decisions under the SP-ALB MP would be for allocation in the future.

125. SMD02 discussed the list of requests to SSP in **Table A** and developed a revised list reflected below in **Table B**.

126. The SC Chair suggested that the Commission at WCPFC21 might consider whether requests that did not get retained as reflected in Table B could be accommodated in a future workplan, as appropriate.

Table B: Revised list of additional analyses to be ranked, with the top-ranked (totalling up to 4 science-units) to be implemented by the SSP before WCPFC21

Subject	Request	Technical feasibility	Science units	SSP Notes	Rank after voting
SP-ALB MPs	6. Evaluate impact of MP not applying to PICT fleets in 1a, 1b, 1c, 1d	OK	3*	Perform as a one-off sensitivity from HCR1 with a 5% constraint using a relative HCR input. Fishing of the uncontrolled 'PICT' fleets set to 2017-2022 average. **NOTE**: if this were across all 7 MPs, this would be 10 science units. Catch-based MPs only. If also on effort, 6 science units required.	

	7. Evaluate baseline of 2000-2004 for all fisheries (LL + TR)	OK	2*	Perform as a one-off sensitivity from HCR1 with a 5% constraint using a relative HCR input. Assuming HCRs are unadjusted from current (output of 1 = 2000-2004). **NOTE**: if this were across all 7 MPs, this would be 8 science units. Catch-based MPs only. If also on effort, 6 science units required.	
	9. Add gear specific catch as additional performance indicators	OK	1	For LL and TR as total, will be presented in the SPAMPLE tables only.	
	10. Add catch and effort variability performance indicators under effort-based runs	Medium	3	As request, effort variability include for effort-based runs only (linked to WCPFC20 request above)	
	12/13. Evaluate new MP: HCR where threshold level is to the left of the iTRP Evaluate new MP: HCR where change point is at 0.85 and a constraint of 20%	OK	2*	Modification of HCR1 with a 5% constraint and relative input into the HCR. Absolute change point at $0.45SB_{F=0}$ will be translated into the relative equivalent. **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.	Modification of HCR1 and relative input into the HCR. **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.
	14. Evaluate HCR where Hillary step lies across the range 0.37 to $0.47SB_{F=0}$ after EM bias correction[1]	OK	2*	Modification of HCR2 design with a 5% constraint and relative input into the HCR (see footnote 1). **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.	

127. Following a priority ranking exercise of the refined list of requests in Table B, SMD02 agreed to additional tasks to the SSP totalling four science units – to be added to the taskings to SSP SC20 and WCPFC20, for delivery to WCPFC21.

128. SMD02 agreed to the additional work set out in **Table 1**. SMD02 also suggested that other items on the list be further considered by the Commission within the prioritization process of the work of the SSP in 2025 as appropriate.

129. SMD02 noted that there were several requests from WCPFC20 and SC20 regarding SP-ALB TRPs, SP-ALB MP-related analyses, and BET/YFT TRP analyses, which the SSP is currently undertaking. These requests, as well as the SP-ALB MP analysis requests, which do not require additional science units and can be managed within SSP existing resources are outlined in **Table 2**.

130. SMD02 requested that the data used in SPAMPLE[5] be made available either publicly or on request, in accordance with the Commission's data rules.

Table 1 – List of new SP-ALB MP-related analyses to be prioritised for attention by SSP before WCPFC21, in addition to ongoing analyses requested by WCPFC20 and SC20, or requested by SMD02 which do not require additional science units. **Analyses in the blue shaded cells (12/13 and 14) were selected by ballot of participating CCMs at SMD02 for implementation.**

Subject	Request	Technical feasibility	Science units	SSP Notes
SP-ALB TRPs	1. Perform evaluation setting EPO Catches to 2017-2019 avg levels	OK	2	SC20 request
SP-ALB MPs	3. Evaluate MPs based upon effort	Medium, currently possible for LL fisheries only	10	WCPFC20 request. Run across the reduced grid of 7 MPs that SMD02 defined.
	4. Evaluate MPs with EPO fishing set at 2017-19 levels	OK	-	Done as a one-off sensitivity for SMD02. Could be used as a robustness test for 'adopted' MP.
	5. Provide VB performance indicator relative to 2020-2022	OK	-	Done for SMD02
	11. Exclude	OK	-	Part of the MSE framework that

[5] SPAMPLE is an online tool for exploring and comparing the performance of alternative candidate management procedures (MPs) for South Pacific albacore.

	archipelagic waters from the MP control			had not been fully developed in time for SMD02 but will be added.
	12/13. Evaluate new MP: HCR where threshold level is to the left of the iTRP Evaluate new MP: HCR where change point is at 0.85 and a constraint of 20%	OK	2*	Modification of HCR1 with a 5% constraint and relative input into the HCR. The absolute change point at $0.45SB_{F=0}$ will be translated into the relative equivalent. **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units. Modification of HCR1 and relative input into the HCR. **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.
	14. Evaluate HCR where Hillary step lies across the range 0.37 to $0.47SB_{F=0}$ after EM bias correction[1]	OK	2*	Modification of HCR2 design with a 5% constraint and relative input into the HCR (see footnote [1]). **NOTE**: on the assumption that just on catch-based MPs. If also anticipated for effort-based MPs, 4 science units.
	15. Make data within SPAMPLE available	OK, dependent upon the format of the data being requested	-	Data underpinning the plots within SPAMPLE are available on request.
BET/YFT TRPs	16. Re-evaluate setting R2 YFT 'miscellaneous fisheries' fishing to more recent levels	OK	4	SC20 request. YFT R2 fishing will be in terms of effort. Implies re-running the 'nuclear grid'.

(Maximum number of points available before WCPFC21, in addition to ongoing work: **4**)

Footnote[1]: Details for proposed HCR:

HCR	Type	$SB/SB_{F=0min}$	$Scalar_{min}$	$Scalar_{max}$	Curve	$Step_{min}$	$Step_{max}$	Height	Constraint
2	'Hybrid'	0.2	0.42	1.2	1	0.37	0.47	1.2	5%

Table 2. List of new SP-ALB MP-related analyses that were *not* prioritized for the work of the SSP before WCPFC21. Analyses with ~~strikethrough~~ (2 and 17) were not included in the ballot because they were considered unnecessary (item 2) or not feasible within the time available prior to WCPFC21 (item 17). The remaining analyses (6, 7, 9, 10 and 17) could be

considered by WCPFC21 for implementation in 2025 if still necessary.				
Subject	**Request**	**Technical feasibility**	**Science units**	**SSP Notes**
~~SP-ALB TRPs~~	~~2. Present vulnerable biomass outcomes relative to 2020-2022 levels~~	~~OK~~	~~1~~	~~SMD02 request. Note results within SPAMPLE are presented in this way and were considered sufficient, so no science units were considered necessary.~~
SP-ALB MPs	6. Evaluate the impact of MP not applying to PICT fleets in 1a, 1b, 1c, 1d	OK	3*	Perform as a one-off sensitivity from HCR1 with a 5% constraint using a relative HCR input. Fishing of the uncontrolled 'PICT' fleets set to 2017-2022 average. **NOTE**: if this were across all 7 MPs, this would be 10 science units. Catch-based MPs only. If also on effort, 6 science units are required.
	7. Evaluate the baseline of 2000-2004 for all fisheries (LL + TR)	OK	2*	Perform as a one-off sensitivity from HCR1 with a 5% constraint using a relative HCR input. Assuming HCRs are unadjusted from the current (output of 1 = 2000-2004). **NOTE**: if this were across all 7 MPs, this would be 8 science units. Catch-based MPs only. If also on effort, 6 science units are required.
	9. Add gear specific catch as additional performance indicators	OK	1	LL and TR as a total will be presented in the SPAMPLE tables only.
	10. Add catch and effort variability performance indicators under effort-based runs	Medium	3	As a request, effort variability includes effort-based runs only (linked to the WCPFC20 request above)
BET/YFT TRPs	~~17. Re-evaluate setting R2 BET 'miscellaneous fisheries' fishing to more recent levels~~	~~OK~~	~~8~~	~~Not requested by SC20. YFT R2 fishing may need to be in terms of effort. Implies re-running the 'nuclear grid'. Two recruitment scenarios to be evaluated.~~

AGENDA ITEM 5 – DEVELOPMENT OF BIGEYE AND YELLOWFIN TRPS

131. According to the Indicative Work Plan for the Adoption of Harvest Strategies under CMM 2022-03

(Attachment 4, WCPFC20 Summary Report_Rev01), the Commission was anticipated to agree on TRPs for bigeye tuna and yellowfin tuna in 2024.

132. The SSP had presented SC20-MI-WP-07 (*Analyses to Inform Discussions on Candidate Bigeye and Yellowfin Target Reference Points*) at SC20 in August, which updated the analyses previously presented to WCPFC18 using the latest assessments for these stocks. SC20 had noted that based upon these analyses, current objectives for these species could not be simultaneously met.

133. SC20 had recommended updating SC20-MI-WP-07 for the Commission by including the depletion levels for SP-ALB resulting under each candidate TRP level, and assessing the impact on vulnerable biomass for bigeye and yellowfin tuna in tropical and southern longline fisheries. Additionally, SC20 had advised re-evaluating bigeye and yellowfin tuna TRPs incorporating recent fishing levels from Indonesia, Philippines, and Vietnam.

134. SMD02 was requested to offer advice to the Commission to assist in the adoption of these TRPs for bigeye and yellowfin tuna.

135. Additional reference documents included:

- Summary of the reports received under tropical tuna CMMs from 2020-2024 (WCPFC-TCC20-2024-IP07)
- Catch and effort data summaries to support discussions on Tropical Tuna CMMs (SC20-MI-IP-05)

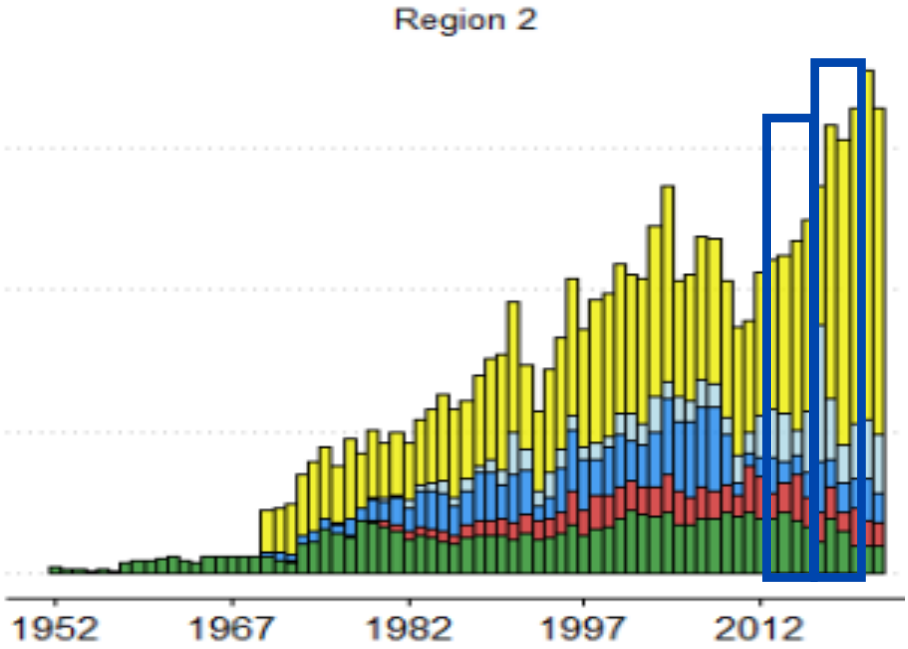
136. Graham Pilling (SSP) presented SMD02-BP-04 on Bigeye and Yellowfin TRPs. In accordance with the Commission's agreed Harvest Strategy Workplan, BET and YFT TRPs were planned to be adopted this year at WCPFC21. However there had been no clear guidance yet from managers on management objectives and the TRP that might be required to achieve each stock's suite of objectives. The SSP was still working on recommendations from the Scientific Committee – with one exception: a comment at WCPFC20 regarding incorporating FAD closure considerations.

137. To provide some information, the SSP had re-run the analyses from WCPFC18-2021-11, and provided the analyses that underpinned Tropical Tuna CMM discussions at WCPFC20.

138. The SSP noted that TRPs could be achieved with many different balances of purse-seine effort and longline catch. Two approaches were taken for future fishing levels:

- As in WCPFC18-2021-11, equal proportional change in PS effort and LL catch cf 2019-2021 levels
- Incorporate recent CMM decisions
  - Fix PS effort at 2012 levels (CMM 2022-01)
  - Incorporate shortened FAD closure (CMM 2023-01) – for BET only
  - Adjust LL catches to achieve future depletion levels
- Re PS: SKJ and YFT affected by overall effort, BET by effort AND FAD closure
- YFT Region 2 – 'other' gear fishing levels set to 2016-2018 effort
- SC20 request for SP-ALB outcomes – assume tropical LL change affects fishing levels in 0-10oS area of SP-ALB assessment

139. He explained the results of the analyses, and these are detailed in SMD02-2024-BP-04 and summarised the outcomes of SC20 on BET and YFT TRPs, including the request for an additional working paper be submitted to WCPFC21, which will include a re-evaluation of the candidate yellowfin and bigeye tuna TRPs using more recent fishing conditions for the domestic fisheries of Indonesia, Philippines, and Vietnam. (2016-18 average catches are significantly lower than recent fishing level, likely leading to a more optimistic projected stock status for yellowfin tuna.)



(2023 YFT assessment Figure 4, western Tropical region catch by gear group. Yellow = Miscellaneous gears)

140. The WCPFC Chair noted that there was a lot to discuss following the SSP's presentation, and various scientific recommendations that would need consideration by managers.

141. Australia spoke on behalf of FFA members, reiterating concerns raised at WCPFC20 and SC20 regarding the large and growing impact of 'other fisheries' on tropical tuna stocks, particularly yellowfin tuna in Region 2 (i.e. the western tropical region) as reflected in the 2023 yellowfin tuna stock assessment. They also noted the advice provided at WCPFC20 and SC20 that current objectives for yellowfin and bigeye tuna in the tropical tuna measure cannot be achieved simultaneously. At this stage, FFA members would need to review the outcomes of the additional analyses requested by SC20 when these are available in order to determine their position on appropriate levels [and approaches] for TRPs for BET and YFT for WCPFC21.

142. Chinese Taipei felt that the SSP analysis showed that there were many species which came very close to meeting their management objectives and that the risk of the BET stock falling below the LRP was very low, and that perhaps the YFT management objective was overly ambitious. According to the tables 4 and 7 of the SSP report, even if the yellowfin TRP decreased to 39% the risk of breaching the LRP was 0. It was understood that the TRP should be set sufficiently far away from the LRP to ensure a low probability of exceeding the LRP. But since YFT is more productive than BET,

Chinese Taipei queried whether it was scientifically appropriate to have the LRP at same level as BET, and requested SSP to expand on the meaning of "emergent properties" of MPs.

143. Graham Pilling (SSP) explained that the aim of TRPs are in part to stay away from the LRP, but they were also about achieving the socioeconomic benefits desired out of the fishery, bearing in mind that lower levels of depletion may be too low to achieve those wider objectives. He concurred with Chinese Taipei's point about setting a TRP at a level that would not risk breaching the LRP. Regarding the productivity of YFT, the relative productivity of BET and YFT is not just affected by biology but by the effects of the different fisheries taking them. On emergent properties – if the SKJ TRP is set at 50% and SP-ALB at 50% and BET at a certain % - they essentially set the levels for other stocks taken. The main outlier is the region 2 "other" fisheries. An implicit TRP may be identified for YFT by looking at the interactions of TRPs for other stocks, and their resultant joint impact on YFT.

144. Korea thanked the SSP for their helpful presentation. Regarding the 2 recruitment scenarios – long term and recent, these have been used for a long time now and Korea thought this complicated the analysis. They also noted that BET was affected by FAD and PS effort, but YFT is only affected by effort, and queried whether it meant that BET was more vulnerable than YFT.

145. Graham Pilling responded that the overall level of fishing by FAD and free school sets combined affected both SKJ and YFT similarly, so SPC didn't separate FAD and free school. But the level of FAD fishing has a much greater differential effect on BET.

146. Japan was alarmed by the increasing trend of tropical tuna in region 2. They felt that it was not plausible to assume that future catch would be constant, which is why the extra analysis had been requested for SC20. It would be useful to have a sensitivity case of future impact on tropical tuna stock of region 2. They also noted that in the next 30 years there would be oceanographic changes and as managers, they thought the long-term recruitment scenario was appropriate. SPC normally used long-term recruitment scenarios, so Japan would prefer to use long-term recruitment if the range of options had to be narrowed down.

147. Graham Pilling said the SSP would prefer for managers to reduce the number of recruitment scenarios, noting that SC20 had not agreed to any scenarios being removed. Regarding a further sensitivity analysis, one of the challenges with the YFT assumption was that the assessment model could not handle using catch alone – some of the runs ran out of fish – which was why the assumption of 2016-2018 catch was changed to 2016-2018 effort. It might be possible to work out a plausible trend for future catch in region 2 but that would be out of the scope of work that could be accomplished before WCPFC21.

148. On behalf of PNA+TK, the Marshall Islands thanked the SSP for the continuing progress in work on BET and YFT TRPs, including some new ideas. On BET, they thanked the SSP for taking on board the PNA+TK request for a BET TRP option based on 2012- 2015 depletion with the FAD closure removed. They thought that worked very well and PNA+TK supported the BET TRP option which was a depletion target of 32%. For consistency with the TRP, they expected the baseline conditions would need to assume no FAD closure.

149. Regarding baseline conditions, PNA+TK were keen to prevent the issue encountered with the SKJ management procedure, where it was not aligned with the tropical tuna CMM. Consequently, they sought a management procedure that could be used to adjust the existing BET measures overall, without reverting to a different base year, as the Commission had ended up doing with the SKJ management procedure.

150. Regarding YFT, PNA+TK considered that it might be very difficult to adopt a YFT TRP and management procedure at this point because of the uncertainty associated with catches in domestic fisheries of some CCMs which will not be covered by a WCPFC HCR or MP. These catches were reported as suddenly doubling from 2018. They were concerned that changes like this created a risk for other CCMs, in that a high YFT TRP may result in HCR outputs indicating a need to reduce purse seine effort or effort in the SP-ALB longline fishery as a result of further catch increases in those other domestic fisheries. Their concern was increased by the information on page 7 of the paper that 37% of the impact on the recent spawning potential came from these fisheries and that these catches are increasing. For that reason, PNA+TK support the SSP's suggestion on page 1 and page 7 that YFT would be controlled by the BET and SKJ MPs and that a YFT TRP may not be needed at this time.

151. The USA recognised that some of the results are from changing purse-seine effort and longline catch by equal proportions, using the same scalar. However, given that the purse-seine and long line fisheries have different fishery impacts, they did not believe that future analyses should be based on equal proportional change. Similarly, they did not think that the management procedure should include baseline levels related to FAD closure duration or longline catch levels to help define the TRP. Furthermore, in designing harvest control rules for bigeye and yellowfin, they did think that it would be useful to consider the use of a threshold reference point, as generally they would prefer the stock to be around the target but understood that, for a number of reasons, it was likely to fluctuate and not be exactly on the target.

152. Noting the discussion, the USA also suggested that at some point the Commission should discuss how the different management procedures would fit together in the mixed fishery framework, and whether there should be some sort of prioritization in the order that the management procedures would be run.

153. SMD02 expressed appreciation for the SSP presentation on the analyses to inform discussions on candidate Bigeye and Yellowfin TRPs (**WCPFC-SMD02-2024-BP-04** and **WCPFC-SMD02-2024-BP-05**), which updated the analyses previously presented to WCPFC18 and concluded that the current objectives for these species cannot be simultaneously met at the exact level.

154. SMD02 expressed concern over the increase in yellowfin catches in Region 2, noting that this took place mainly in archipelagic waters excluded from the tropical tuna measure. SMD02 noted the request of SC20 for analysis from the SSP to be submitted to WCPFC21, which will include a re-evaluation of the candidate yellowfin and bigeye tuna TRPs using more recent fishing conditions for the domestic fisheries of Indonesia, Philippines, and Vietnam. SMD02 noted that the SSP expects to deliver the schedule of work for yellowfin tuna as reflected in the shaded area of **Table 1** for WCPFC21.

AGENDA ITEM 6 – APPLICATION OF THE SKIPJACK TUNA MANAGEMENT PROCEDURE– MONITORING STRATEGY

155. The SC Chair introduced this agenda item, recalling that WCPFC19 had adopted a management procedure for WCPO skipjack tuna (CMM 2022-01), and WCPFC20 had noted the successful running of the skipjack Management Procedure. However, WCPFC20 had also noted that a re-evaluation of the skipjack estimation method within the MP needed to be undertaken prior to the next

implementation of the Management Procedure in 2026.

156. WCPFC20 also reviewed a draft monitoring strategy for skipjack tuna and, as a result:

> "313. The Commission noted that it was not yet in a position to adopt a monitoring strategy for skipjack tuna at this time but there was a need for intersessional work, led by the SC and TCC Chairs, to facilitate the development by SSP of a monitoring strategy for adoption at WCPFC21, using the information in Attachment B of *WCPFC20-2023-14* as a reference".

157. SC20 had subsequently considered SC20-MI-WP-02 (*WCPFC Skipjack Tuna Monitoring Strategy Report*) by the SSP, which updated the skipjack MP Monitoring Strategy to reflect previous Commission discussions, and which highlighted the key issues for SC20 to review.

158. Based on that discussion, SC20 requested the SSP to analyze the impact of FAD closure duration changes and the representativeness of CPUEs on the interim skipjack MP. SC20 also recommended reviewing the monitoring strategy in non-assessment years and proposed two updates to the monitoring strategy Table 1 for further consideration by SMD02, TCC20, and WCPFC21.

159. Also, noting the observations within the monitoring strategy on the decline in pole-and-line fishing effort and the implications of this for the estimation method within the skipjack interim management procedure, SC20 recommended that the SSP evaluate potential modifications to the estimation method for the WCPO skipjack interim MP, considering changes to CPUE indices and alternative assessment approaches, and report the findings to SC21 for further review and recommendations before the next implementation of the MP.

160. SMD02 was asked to review the outcomes of these Skipjack MP and Monitoring Strategy discussions from SC20 and provide recommendations to the Commission for adoption at WCPFC21.

161. Rob Scott (SSP) presented WCPFC-2024-SMD02-BP-06 on the skipjack monitoring strategy, explaining that the MS component of the harvest strategy approach was a routine check that the management procedure was performing as expected. The monitoring strategy should consider all aspects of the Harvest Strategy including procedures for evaluating and testing MPs; the identification of any scenarios that should be added to the OM grid; the preparation and application of the EM and the performance of the management procedure as a whole. In addition, it may identify changes in the dynamics of the fishery resulting from environmental, economic or social factors that may require a reconsideration for the management objectives and the testing of alternative MPs. This paper updated the skipjack MP monitoring strategy to reflect Commission discussions and observations at WCPFC20 and key issues arising subsequently, and clarified areas for consideration by TCC20 and SMD02.

162. The Solomon Islands, on behalf of FFA CCMs supported the analyses requested by SC20 to evaluate recent changes in the FAD closure duration and the appropriateness of candidate CPUEs because they would be informative in determining the performance of the SKJ management procedure. They also supported the recommendations made by SC20 for the Scientific Committee to provide feedback through the Online Discussion Forum in years when a WCPO SKJ stock assessment is not conducted and to amend elements 1a and 1b of the skipjack monitoring strategy because they would help determine if the SKJ MP is performing as expected.

163. Japan wanted to share their perspective on MSE, as a member of several RFMOs. One of the contentious points in adopting an MP was the timing of its review. The review usually means wholesale evaluation of all aspects of the adopted MP and MSE, and usually means redoing the

MSE. But the MP itself was something adopted for the long term and should provide a stable framework over that period. However, SMD02 now seemed to be reviewing part of the MP itself. Japan noted that the shrinking pole and line fishery was well known and that the pole and line CPUE index should not have been used in the MP because the MP was supposed to be stable.

164. The TCC Chair (Mat Kertesz – AU) stated that he was keen for TCC20 to be able to provide useful advice to WCPFC21 on some of the issues arising from SC20 and SMD02. He drew the attention of CCMs to items on the TCC20 agenda that might be able to contribute information relevant to the Skipjack Monitoring Strategy. Some of this would come from the Compliance Monitoring Report process as well as discussions on the performance of the tropical tuna CMM, the FAD management options working group, and particularly the work that TCC had been doing for over the two years on reviewing the data available for verifying compliance. The TCC Chair indicated that he would be consulting with the SC Chair following this SMD meeting to develop information for TCC20's consideration. He added that the paper put forward by the SSP clearly identified the key issues on which TCC could provide guidance to the Commission.

165. FFA CCMs noted the continued contraction of pole and line effort in the tropical regions and the potential problem this caused for the future running of the SKJ MP in the absence of any good alternative index, and supported the recommendation made by SC20 that SC21 review the output from the re-evaluation of the estimation method and provide recommendations to WCPFC22 to consider in 2025 regarding the potential need to revise the current skipjack MP.

166. Tokelau for PNA+TK CCMs thanked the SSP for the MP work and emphasised the importance of explaining the necessity of better aligning the MP with the tropical tuna CMM, and to include reference to changes to the historical data. Table 1 of SMD02 Background Paper 06 provided a good evaluation of the MP's performance.

167. The USA supported Japan's view that the Commission should not be making adjustments to the MP on an annual basis. They recalled, however, that SC19 had recommended that the SKJ MP should take particular account of climate change and consideration should be given to SEAPODYM outputs in the SKJ MP, in line with the SC19 recommendation. They understood that SC20 had made recommendations on the SKJ MP and that the MP report would be reviewed by TCC20, but the report did not completely capture what needs to be done by TCC. Noting that Japan requested feedback on items 1b, 1c and 2c in the draft Monitoring Strategy from both SC and TCC, the USA asked what could be recommended by SMD02 which is not already covered by SC. They suggested that TCC and WCPFC use the WCPFC Online Discussion Forum (ODF) mechanism for providing input on a similar cycle to the SC review.

168. On the question of where TCC could contribute to the process, Rob Scott (SSP) offered that most of this review could be done by SC but there were compliance aspects which needed to be considered by TCC. There was an opportunity for information to arise as, and when, it became available – for example: information from ad-hoc country processes. Regarding revision of the operating models, the SSP was also interested in including climate change influences, but first there would need to be some modifications to SEAPODYM to generate the kind of inputs that would be needed by the operating models, which SSP was already investigating.

169. Japan felt there was no need for an annual review of the interim SKJ Management Procedure because there was not much change to the purse-seine fishery, although this year it had been requested that the MP be reviewed because of potential impacts of the FAD closure changes.

170. Rob Scott said that the SSP concurred with Japan that impact of the FAD closure changes would probably not have major impact on running the MP, but it would be necessary to test that assumption through a more rigorous process.

171. Palau, on behalf of PNA+TK CCMs thanked the SC and SSP for the continuing work to ensure the effectiveness of the skipjack management procedure. They noted that the MP was adopted as a long-term arrangement - something to be agreed upon, then put away to be taken out every 3 years and run to see if any changes are needed to keep the stock on track. Like Japan, PNA+TK did not expect to be looking at changing a key element of the MP after the first run. They understood the concern of the SC about the effectiveness of the estimation method because of the decline in the Japanese pole and line fleet. At this stage, PNA+TK did not see a basis for triggering the "exceptional circumstances" provision before the next assessment. On that basis, they expected that the assessment would be undertaken as planned in 2025 and the MP would be run as it is currently specified in 2026. Then the results of the assessment and the MP would be compared to see if the operation of the MP had been demonstrated to meet the test of being risky or inappropriate in a manner that would provide the basis for triggering the "exceptional circumstances" provision.

172. SMD02 thanked the SSP for the updated skipjack monitoring strategy (**WCPFC-SMD02-2024-BP-06**), which, amongst other things, provided clear guidance on what technical advice TCC can provide to the Commission. SMD02 supported the approach of not making adjustments to the key elements of the monitoring strategy on an annual basis, but that modelling be undertaken as part of the next review of the management procedures in 2026, including for scenarios related to climate change.

173. SMD02 recommended that as part of the next regular review of the skipjack management procedure, the Commission directly incorporate SEAPODYM and/or other model projections into the skipjack management strategy evaluation operating model grid projections.

AGENDA ITEM 7 – CLIMATE CHANGE

174. As requested by the Commission, the WCPFC Climate Change Co-leads from the United States and the Republic of the Marshall Islands drafted a Climate Change Work Plan that was under review by WCPFC subsidiary bodies in 2024. The draft work plan suggested that climate change could be considered in developing management procedures for skipjack and South Pacific albacore and discussed at SMD02. The draft work plan also proposed convening a 2025 SMD focused on climate change, including discussions on incorporating climate change impacts in harvest strategies development.

175. It was suggested that SMD02 discuss incorporating climate considerations into the development of harvest strategies and any further refinements to the work plan.

176. The WCPFC Executive Director Rhea Moss-Christian suggested an open discussion on this topic, taking the background paper as read.

177. The Cook Islands, speaking for FFA CCMs, believed the standing agenda item on Climate Change in regular Commission meetings was the appropriate place to hold these discussions and there was no priority need for a standalone meeting on this issue, in view of the pressure of work under the Harvest Strategy Workplan.

178. The USA suggested that this SMD should provide a general output for the record, noting the continuing importance of climate change to CCMs, and that the Commission would be continuing to support aspects of climate change into the Commission's harvest strategy discussions.

179. SMD02 noted the proposed Work Plan from the Co-Chairs of the Climate Change Working Group (**WCPFC-SMD02-2024-BP-07**), which included a reference to a dedicated SMD on climate change in 2025. However, given the important work on harvest strategies to be done in 2025, SMD02 considered that an SMD on climate change should not be held in 2025, although SMD02 agreed that the Commission should continue to incorporate climate change considerations into the work of the Commission.

180. SMD02 suggested that the Commission continue to support incorporating climate change considerations into the WCPFC harvest strategy process, and that SC consider incorporating SEAPODYM and/or other model projections into MSE and monitoring work where appropriate for South Pacific albacore and skipjack, and potentially yellowfin and bigeye tuna stocks.

181. SMD02 suggested that WCPFC21 request the Secretariat, with input from the SSP, to develop Terms Of Reference for SC21 for a project funding an independent review of SEAPODYM so that the progress made to address issues raised in the last SEAPODYM review (**WCPFC-SC16-EB-IP-06**) can be understood prior to explicitly incorporating SEAPODYM outputs into future MSE OM grid projections and monitoring work for South Pacific albacore, bigeye, yellowfin and skipjack tuna stocks managed by the Commission.

AGENDA ITEM 8 – OTHER MATTERS

8.1 New report template for WCPFC Stock Assessment reports

182. The SC Chair provided an overview of a standardized approach to reporting stock status and management advice. This was detailed in paper **SMD02-2024-BP-08**.

183. SC20 had endorsed the adoption of a new reporting template for WCPFC Stock Assessment Reports. SC20 also supported the recommendations in **SC20-SA-WP10** for enhancing consistency in reporting, especially in communicating uncertainty, and agreed to use the proposed template as a guideline for SC21, while recommending that SMD02 and the Commission review and provide feedback if necessary.

184. USA wanted to request, on the record, that stock status should be reported against MSY as well.

185. SMD02 noted the recommendation from the Scientific Committee on the new report template for WCPFC Stock Assessment Reports (**WCPFC-SMD02-2024-BP-08**).

AGENDA ITEM 9 – ADMINISTRATIVE MATTERS

9.1 Next SMD meeting

186. SMD02 agreed that decisions about the future of the SMD process and the timing and focus of future meetings were to be decided by the Commission.

AGENDA ITEM 10 – REVIEW OF SMD02 AGREED POINTS AND OUTCOMES

187. SMD02 discussed and agreed an Outcomes Document, which was circulated shortly after the meeting. These outcomes are those that are also recorded in this summary draft report as boxed text.

AGENDA ITEM 11 – CLOSE OF MEETING

188. The SMD02 co-Chairs thanked CCMs, the Secretariat, and the SSP for their support and participation in the process and noted that the suggestions and recommendations from SMD02 would be going to the Commission for further consideration at WCPFC21.

189. SMD02 closed at 13:41 on 12th September 2024.

List of Participants

CO-CHAIR

Josie M Tamate
Western and Central Pacific Fisheries Commission
Chair
josie.tamate@gmail.com

CO-CHAIR

Emily Crigler
Western and Central Pacific Fisheries Commission Scientific Committee
Chair
emily.crigler@noaa.gov

AUSTRALIA

Mat Kertesz
Department of Agriculture, Fisheries and Forestry
Director, Multilateral Fisheries
mat.kertesz@agriculture.gov.au

James Larcombe
Department of Agriculture, Water and the Environment
Principal Scientist
james.larcombe@awe.gov.au

Lakshmi Gudipati
Department of Agriculture, Fisheries and Forestry
Senior Policy Officer
lakshmi.gudipati@aff.gov.au

Lara Ainley
AFMA
Tuna Manager
lara.ainley@afma.gov.au

CANADA

Amber Lindstedt
Fisheries and Oceans Canada
Deputy Director, Pacific International Fisheries Policy
Amber.Lindstedt@dfo-mpo.gc.ca

Felicia Cull
Fisheries and Oceans Canada
Senior Policy Advisor
felicia.cull@dfo-mpo.gc.ca

Jennifer Shaw
Fisheries and Oceans Canada
Senior Science Advisor
jennifer.shaw@dfo-mpo.gc.ca

Kristen Cote
Fisheries and Oceans Canada
Senior Policy Advisor
kristen.cote@dfo-mpo.gc.ca

Sarah Hawkshaw
Fisheries and Oceans Canada
Biologist
sarah.hawkshaw@dfo-mpo.gc.ca

CHINA

Chang Zhang
zhejiang ocean university
lecturer
itschang@foxmail.com

Jiaqi Wang
Shanghai Ocean University
Post doctor
jq-wang@shou.edu.cn

Li Chunhong
CNFC Overseas Fisheries Co., Ltd.
Manager
lichunhong@myyahoo.com

Li Yan
China Overseas Fisheries Association
Coordinator

liyan@cofa.net.cn

Liu Xiaobing
Shanghai Ocean University
Visiting Professor
xiaobing.liu@hotmail.com

Shu Su
Shanghai ocean university
Dr
ssu@shou.edu.cn

Xiaodong Li
Shanghai Ocean University
999 Hucheng Huan Rd, Pudong, Shanghai
201306
lixiaodong2019310@163.com

Xiaojie Dai
Shanghai Ocean University
Professor
xjdai@shou.edu.cn

Zhe Geng
Shanghai Ocean University
Delegation Member
zhegeng1993@foxmail.com

COOK ISLANDS

Pamela Maru
Ministry of Marine Resources
Secretary
P.Maru@mmr.gov.ck

EUROPEAN UNION

Ignacio De Leiva Moreno
European Union
Fisheries Attache
Ignacio.de-leiva@eeas.europa.eu

Miguel Herrera
OPAGAC
Deputy Manager
miguel.herrera@opagac.org

Stamatis Varsamos
European Commission, Directorate General for Maritime Affairs and Fisheries, Unit B2: RFMOs
Head of the European Union Delegation
Stamatios.VARSAMOS@ec.europa.eu

FEDERATED STATES OF MICRONESIA

Barbara Hanchard
c/o FSM National Oceanic Resource Management Authority
Consultant
barbara@hanchard.net

Jamel James
FSM National Oceanic Resource Management Authority
Assistant Director
jamel.james@norma.fm

FIJI

Apete Dabea
Ministry of Fisheries - Offshore Fisheries Division
Fisheries Assistant
apetedabea@gmail.com

Moses Mataika
Ministry of Fisheries Fiji
Fisheries Officer Offshore Fisheries Management Division
mataika.moses@gmail.com

JAPAN

Haruo Tominaga
Fisheries Agency of Japany
Director for International Fisheruies Coordination
haruo_tominaga170@maff.go.jp

Hidetada Kiyofuji
Fisheries Resources Institute
Highly Migratory Resource Division, Fisheries Stock Assessment Center
kiyofuji_hidetada20@fra.go.jp

Reiko Ohashi
Japan Tuna Fisheries Co-operative Association
Assistant Director
ohashi@japantuna.or.jp

Shinji Hiruma
Fisheries Agency of Japan
International Affairs Division
shinji_hiruma150@maff.go.jp

Shuya Nakatsuka
Fisheries Resources Institute
Deputy Director, Highly Migratory Resources Division
nakatsuka_shuya49@fra.go.jp

Takumi Fukuda
Fisheries Agency of Japan
Resource Management Department
takumi_fukuda720@maff.go.jp

Yoshinori Aoki
Japan Fisheries Research and Education Agency
Skipjack and albacore group, National Research Institute of Far Sea Fisheries,
aoki_yoshinori04@fra.go.jp

Yuichi Tsuda
Fisheries Resources Institute, Japan Fisheries Research and Education Agency
Head, Skipjack and Albacore Group, Highly Migratory Resources Division
tsuda_yuichi58@fra.go.jp

Yuji Uozumi
Japan Tuna Fisheries Co-operative Association
Adviser
uozumi@japantuna.or.jp

KIRIBATI

Tiura Takenimakin
Ministry of Fisheries & Marine Resource Development
Fisheries Compliance Officer
tiurat@mfmrd.gov.ki

NEW ZEALAND

Heather Ward
Ministry for Primary Industries
Principal Advisor
Heather.Ward@mpi.govt.nz

Arthur Hore
Ministry for Primary Industries
Manager, Offshore Fisheries

Chelsea Roberts
Ministry of Foreign Affairs and Trade
Policy Officer
chelsea.roberts@mfat.govt.nz

Darcy Webber
Quantifish Ltd
Fisheries Scientist
darcy@quantifish.co.nz

Hilary Ayrton
Ministry for Primary Industries
Senior Fisheries Analyst

Leyla Knittweis
Ministry for Primary Industries
Principal Scientist
leyla.knittweis@mpi.govt.nz

Sarah McAvinchey
Ministry of Foreign Affairs and Trade
Lead Adviser

PAPUA NEW GUINEA

Benthly Sabub
National Fisheries Authority (NFA)

Fisheries Management Officer, Tuna Fishery
bsabub@fisheries.gov.pg

PHILIPPINES

Alma C. Dickson
Bureau of Fisheries and Aquatic Resources
Fisheries Consultant
alma_divkson@yahoo.com

Benjamin Felipe Jr. Tabios
Bureau of Fisheries and Aquatic Resources
Adviser
benjotabios@gmail.com

Francisco SB Torres Jr
National Fisheries Research and Development Institute - Philippines
Senior Science Research Specialist
franciscojr.torres@nfrdi.da.gov.ph

Isidro Tanangonan
Bureau of Fisheries and Aquatic Resources
Aquaculturist II
itanangonan@bfar.da.gov.ph

Jay-ar Pol Mahinay
DA-BFAR
Aquaculturist I
jayarpolmahinay@gmail.com

Noemi SB Buenaventura
BFAR NCR
Regional Director
noemilanzuela@gmail.com

Rafael V Ramiscal
Bureau of Fisheries and Aquatic Resources (BFAR)
Chief, Capture Fisheries Division
rv_ram55@yahoo.com

Suzette Barcoma
National Fisheries Research and Development Institute
Senior Science Research Specialist
suzettebarcoma@gmail.com

REPUBLIC OF KOREA

Ilkang Na
Ministry of Oceans and Fisheries
Policy Officer / Multilateral Fisheries Negotiator
ikna@korea.kr

Jae-geol Yang
Korea Overseas Fisheries Cooperation Center
Policy Analyst
jg718@kofci.org

Jung-re Riley Kim
Ministry of Oceans and Fisheries
Head of Fisheries Negotiation Unit
riley1126@korea.kr

REPUBLIC OF MARSHALL ISLANDS

Beau Bigler
Marshall Islands Marine Resources Authority
Chief Fisheries Officer
bbigler@mimra.com

Berry Muller
Marshall Islands Marine Resources Authority
Deputy Director - Oceanic and Industrial Affairs Division
bmuller@mimra.com

Francisco Blaha
MIMRA
Ofsshore Fisheries Advisor
fblaha@mimra.com

Glen Joseph
Marshall Islands Marine Resources Authority
Executive Director
gjoseph@mimra.com

CHINESE TAIPEI

Ding-Rong Lin

Fisheries Agency, Ministry of Agriculture
Director, Deep Sea Fisheries Division
dingrong@ms1.fa.gov.tw

I-Sheng Wu
Fisheries Agency, Ministry of Agriculture, TAIWAN
Project Assistant
isheng0108@ms1.fa.gov.tw

Joseph Chia-Chi Fu
Overseas Fisheries Development Council
Director
joseph@ofdc.org.tw

Joy Hsiangyi Yu
Fisheries Agency, Ministry of Agriculture
Section Chief, Pacific Ocean Fisheries Management Section, Distant Water Fisheries Division
hsiangyi@ms1.fa.gov.tw

Ren-Fen Wu
Overseas Fisheries Development Council
Director of Information Division
fan@ofdc.org.tw

Shui-Kai Chang
National Sun Yat-sen University
Professor
skchang@faculty.nsysu.edu.tw

Tsu-Kang Wen
Fisheries Agency, Ministry of Agriculture
Senior Executive Officer
tsukang1008@ms1.fa.gov.tw

Tzu-Ching Yu
Overseas Fisheries Development Council
Secretary
evan@ofdc.org.tw

Wen-Yu Chen
Pacific Ocean Fisheries Management Section, Distant Water Fisheries Division, Fisheries Agency, Ministry of Agriculture
Specialist
chenwenyu@ms1.fa.gov.tw

Wu Jia-Rong
Overseas Fisheries Development Council
Statistician
wujiarong@ofdc.org.tw

Yi-Jay Chang
National Taiwan University
Associate Professor
yijay.chang@gmail.com

TONGA

Siolaa Malimali
Ministry of Fisheries
Deputy Chief Executive Officer

TUVALU

Isala Tito Isala
Tuvalu Fisheries Department
Legal Officer
isala.fisheries@gmail.com
Michael Batty
Tuvalu Fisheries Department
Adviser

Niukita Taape
Tuvalu Fisheries Department
Fisheries Officer, Oceanic Fisheries
niukzi19@gmail.com

Rosalia Uoka
Tuvalu Fisheries Department
Licensing Fisheries Officer
ruoka@gov.tv

Siouala Malua
Tuvalu Fisheries Department
Senior Fisheries Officer (Licensing & Data)
sioualam@tuvalufisheries.tv

Tupulaga Poulasi
Tuvalu Fisheries Department

Principal Fisheries Officer
etuati.ptauia@gmail.com

UNITED STATES OF AMERICA

Alex Kahl
NOAA Fisheries - Pacific Islands Regional Office
International Fisheries
alex.kahl@noaa.gov

Alexa Cole
NOAA Office of International Affairs & Seafood Inspection
Director
Alexa.Cole@noaa.gov

Christa Marie Svensson
PFMC
Alternate-Commissioner
csvensson@trimarinegroup.com

Clayton Wraith
Western Fishboat Owners Association (WFOA)
Executive Director
clayton.wraith@wfoa-tuna.org

Eleanor Bors
NOAA Fisheries
International Affairs, Trade, and Commerce
eleanor.bors@noaa.gov

Eric Kingma
Hawaii Longline Association
Executive Director
Eric.K.Kingma@gmail.com

Gerald Leape
Pew Charitable Trusts
International Government Relations
gleape@pewtrusts.org

Jason Philibotte
NOAA Fisheries
International Fisheries, Division Chief
jason.philibotte@noaa.gov

Josh Madeira
Monterey Bay Aquarium
Director of Policy & Stakeholder Engagement
jmadeira@mbayaq.org

Keith Bigelow
NOAA PIFSC
Fisheries Biologist
keith.bigelow@noaa.gov

Kelly Kryc
National Oceanic and Atmospheric Administration
Deputy Assistant Secretary for International Fisheries
kelly.kryc@noaa.gov

Kitty Simonds
Western Pacific Regional Fishery Management Council
Executive Director
Kitty.Simonds@wpcouncil.org

Mark Fitchett
Western Pacific Regional Fisheries Management Council (WPRFMC)
Pelagic Ecosystem Fisheries Scientist
mark.fitchett@wpcouncil.org

Merna Saad
Department of State
Foreign Affairs Advisor
saadmn@state.gov

Nicholas Ducharme-Barth
NOAA Fisheries
Research Mathematical Statistician
nicholas.ducharme-barth@noaa.gov

Raymond Clarke
Bumblebee SeaFoods
VP
ray.clarke@bumblebee.com

Roger Dang

Member
Vice Chair

Steven Teo
NOAA Fisheries
Research Fisheries Biologist
steve.teo@noaa.gov

Stuart Chikami
Western Pacific Fisheries, Inc.
Manager

Tyler Lawson
NOAA Fisheries
Fish Biologist
tyler.lawson@noaa.gov

Valerie Post
NOAA Fisheries
Fishery Policy Analyst
valerie.post@noaa.gov

Yonat Swimmer
NOAA PIFSC
Fisheries Biologist
yonat.swimmer@noaa.gov

AMERICAN SAMOA

Domingo Ochavillo
Department of Marine & Wildlife Resources
Chief Fisheries Biologist
ochavill@gmail.com

FRENCH POLYNESIA

Thibaut Thellier
Marine Resources Department
Fisheries officer
thibaut.thellier@administration.gov.pf

Anne-Marie Trinh
Marine resources department
Fisheries officer
anne-marie.trinh@administration.gov.pf

NEW CALEDONIA

Manuel Ducrocq
New Caledonia Government
Head of the natural park of the Coral sea and fisheries department of New Caledonia
manuel.ducrocq@gouv.nc

Mickael Lercari
Natural park of the Coral sea and fisheries department of New Caledonia
Fisheries and environment officer
mickael.lercari@gouv.nc

TOKELAU

Lesley Gould
Tokelau Fisheries Management Agency
Fisheries Advisor
lesleykgould@gmail.com

AUSTRALIAN NATIONAL CENTRE FOR OCEAN RESOURCES AND SECURITY (ANCORS)

Bianca Haas
Australian National Centre for Ocean Resources and Security
Research Fellow
bhaas@uow.edu.au

Lily Muller
ANCORS
PhD Candidate
lm499@uowmail.edu.au

INTER-AMERICAN TROPICAL TUNA COMMISSION (IATTC)

Haikun Xu
IATTC
Scientist
hkxu@iattc.org

Juan Valero
IATTC
MSE Contractor - Independent Fisheries Stock

Assessment Scientist
jvalero@iattc.org

INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION (ISSF)

Claire van der Geest
ISSF
Advisor
claire.vandergeest@gmail.com

MARINE STEWARDSHIP COUNCIL

Bill Holden
Marine Stewardship Council
Senior Tuna Fisheries Outreach Manager
bill.holden@msc.org

Sayuri Ichikawa
Marine Stewardship Council
WCPO Tuna Project Manager
sayuri.ichikawa@msc.org

NORTH PACIFIC FISHERIES COMMISSION (NPFC)

Robert Day
North Pacific Fisheries Commission
Executive Secretary
rday@npfc.int

ORGANIZATION OF THE FISHERIES AND AQUACULTURE SECTOR OF THE CENTRAL AMERICAN ISTHMUS (OSPESCA)

Bernal Alberto Chavarria Valverde
OSPESCA
International Policy and Management Coordinator
bchavarria@lsg-cr.com

PACIFIC COMMUNITY (SPC)

Finlay Scott
Pacific Community
Fisheries Scientist
finlays@spc.int

Graham Pilling
Pacific Community (SPC)
Deputy Director FAME (OFP)
grahamp@spc.int

Nan Yao
Pacific Community
Fisheries Scientist
nany@spc.int

Paul Hamer
Pacific Community
Principal Scientist
paulh@spc.int

Robert Scott
Pacific Community
Senior Fisheries Scientist
robertsc@spc.int

PACIFIC ISLANDS FORUM FISHERIES AGENCY (FFA)

'Ana F. Taholo
Pacific Islands Forum Fisheries Agency
Compliance Policy Advisor
ana.taholo@ffa.int

Adele Dutilloy
FFA
Fisheries Management Advisor
adele.dutilloy@ffa.int

Joyce Samuelu-Ah Leong
Pacific Islands Forum Fisheries Agency (FFA)
Fisheries Management Adviser
joyce.samuelu-ahleong@ffa.int

Lianos Triantafillos
Pacific Islands Forum Fisheries Agency (FFA)
Fisheries Management Advisor
lianos.triantafillos@ffa.int

Ludwig Kumoru

Pacific Islands Forum Fisheries Agency (FFA)
Director Fisheries Management Division
ludwig.kumoru@ffa.int

Marina Abas
Pacific Islands Forum Fisheries Agency (FFA)
Fisheries Management Advisor
marina.abas@ffa.int

Michael Honeth
FFA
Fisheries Management Adviser
michael.honeth@ffa.int

Ueta Junior Faasili
FFA
Fisheries Management Advisor
uetajunior.faasili@ffa.int

PARTIES TO THE NAURU AGREEMENT (PNA)

Sangaalofa Clark
PNAO
Chief Executive Officer
sangaa@pnatuna.com

Brian Kumasi
Office of the Parties to the Nauru Agreement
Policy Manager
Brian@pnatuna.com

Les Clark
PNA
Adviser
les@pnatuna.com

Stephen Brouwer
Parties to the Nauru Agreement
Consultant

PEW CHARITABLE TRUSTS

Glen Holmes
The Pew Charitable Trusts
Senior Officer
gholmes@pewtrusts.org

THE OCEAN FOUNDATION

Dave Gershman
The Ocean Foundation
Officer, International Fisheries Conservation
dgershman@oceanfdn.org

WCPFC SECRETARIAT

Eidre Sharp
Western and Central Pacific Fisheries
Commission (WCPFC)
Deputy Compliance Manager
Eidre.Sharp@wcpfc.int

Elaine G. Garvilles
Western and Central Pacific Fisheries
Commission (WCPFC)
Assistant Science Manager
Elaine.Garvilles@wcpfc.int

Emma Nelson-Mori
Western and Central Pacific Fisheries
Commission (WCPFC)
Project Management Assistant
emma.mori@wcpfc.int

Karl Staisch
Western and Central Pacific Fisheries
Commission (WCPFC)
ROP Coordinator
karl.staisch@wcpfc.int

Lara Manarangi-Trott
Western and Central Pacific Fisheries
Commission (WCPFC)
Compliance Manager
Lara.Manarangi-Trott@wcpfc.int

Lars Olsen
WCPFC WPEA-ITM Project
Project Manager
olsenpacific@gmail.com

Lucille Martinez
Western and Central Pacific Fisheries Commission (WCPFC)
Administrative Officer
lucille.martinez@wcpfc.int

SungKwon Soh
Western and Central Pacific Fisheries Commission (WCPFC)
Science Manager
sungkwon.soh@wcpfc.int

Penny Ridings
Western and Central Pacific Fisheries Commission (WCPFC)
Legal Advisor
pennyridings@yahoo.com

Tim Adams
Western and Central Pacific Fisheries Commission (WCPFC)
Meeting Rapporteur
tim.adams@gonedau.com

Rhea Moss-Christian
Western and Central Pacific Fisheries Commission (WCPFC)
Executive Director
rhea.moss-christian@wcpfc.int

Tim Jones
Western and Central Pacific Fisheries Commission (WCPFC)
IT Manager
tim.jones@wcpfc.int

LIST OF WCPFC REPORT ABBREVIATIONS	
ACAP	Agreement on the Conservation of Albatrosses and Petrels
ACE	Annual Catch and Effort estimate
ANCORS	Australian National Centre for Ocean Resources and Security
ASPM	Age-Structured Production Model
AW	Archipelagic waters
BET	Bigeye tuna
BRP	Billfish Research Plan
CCM	Members, Cooperating Non-members and participating Territories
CI	Conservation International
CKMR	Close-kin mark-recapture (based on genome analysis)
CMM	Conservation and Management Measure
CMR, pCMR, fCMR	Compliance Monitoring Report (p-provisional; f-final)
CMS	Compliance Monitoring Scheme
CNM	Cooperating Non-Member
D	Depletion ratio (current versus unfished number of fish)
DP	Delegation paper
EEZ	Exclusive Economic Zone
EM	Estimation Model/Estimation Method/ or Electronic Monitoring
EPO	Eastern Pacific Ocean
ERandEM, ER&EM	Electronic reporting and electronic monitoring
FAC	Finance and Administration Committee
FAD	Fish aggregating (or aggregation) device
FAO	Food and Agriculture Organization of the United Nations
FFA	Pacific Islands Forum Fisheries Agency
FSM	Federated States of Micronesia
HCR	Harvest Control Rule
HS	Harvest Strategy
HSBI	High Seas Boarding and Inspection
IATTC	Inter-American Tropical Tuna Commission
ISA	International Seabed Authority
ISC	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean
ISG	Informal Small Group (side-meeting during an SC session break)
ISSF	International Seafood Sustainability Foundation
IWG	Intersessional Working Group
JTF	Japan Trust Fund
JWG	Joint Working Group
MFCL	MultiFAN-CL – an SPC tuna stock assessment modelling platform

MLS	Striped Marlin
MOU	Memorandum of Understanding
MP	Management Procedure
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
NC	WCPFC Northern Committee
NGO	Non-Governmental Organization
NPFC	North Pacific Fisheries Commission
NP-ALB	North Pacific albacore
NTADS	Non-target and Associated or Dependent Species
OM	Operating model
PBF	Pacific Bluefin Tuna
PNA	Parties to the Nauru Agreement
PNA+ or PNA+TK	PNA and Tokelau – the Parties to the Palau Arrangement, VDS participants
PNAO	Office of the Parties to the Nauru Agreement
PNG	Papua New Guinea
RBAF	Risk-based assessment framework
RMI	Republic of the Marshall Islands
ROP	Regional Observer Programme
SB	Spawning Biomass (SSP terminology)
$SB/SB_{F=0}$	Spawning Biomass depletion ratio (versus unfished SB)
SBT	Southern bluefin tuna
SC	WCPFC Scientific Committee
SciData	Scientific Data to be Provided to the Commission
SIDS	Small Island Developing States
SKJ	Skipjack tuna
SMD	Science Management Dialogue
SP-ALB	South Pacific albacore
SPARM	South Pacific albacore Roadmap
SPC	Pacific Community
SPG	South Pacific Group
SPR	Spawning potential ratio
SPRFMO	South Pacific Regional Fisheries Management Organisation
SRP	Shark Research Plan
SS	Stock Synthesis (a widespread stock assessment modelling platform)
SSB	Spawning Stock Biomass (ISC terminology)
SSP	Scientific Service Provider (a function of SPC's OFP)
SWG	Small working group
TCC	WCPFC Technical and Compliance Committee
TRP	Target Reference Point
U	Proportion of unfished stock abundance removed by fishing

VDS	Vessel Day Scheme
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean
WPEA-ITM	West Pacific East Asia – Improved Tuna Monitoring Project
WTPO	World Tuna Purse Seine Organisation
YFT	Yellowfin tuna