

Report of the Second Intersessional Meeting of Panel 1 on Western Skipjack MSE
(Online, 5 May 2023)

1. Opening of the meeting and meeting arrangements

The meeting was opened by the SCRS Chair Dr Craig Brown (United States), in the absence of the Panel 1 Chair, who had technical difficulties that prevented his participation for most of the meeting.

2. Appointment of Rapporteur

Ms. Callan Yanoff (USA) was appointed as the rapporteur.

3. Adoption of agenda

A CPC asked when to raise questions/comments related to the management cycle, operating models, including robustness tests, and the three categories of candidate management procedures (CMPs) being evaluated (constant catch, empirical, and model-based). In response, the SCRS Chair added agenda item 6.6, "Other topics requiring input from Panel 1" as a space to give progress updates and context on this MSE. The agenda as amended was adopted (**Appendix 1**).

The list of participants is included as **Appendix 2**.

4. Review of the tropical tunas MSE framework (Commission roadmap)

The United States volunteered to give a brief overview of the status of the Commission roadmap, which had been updated by the SCRS prior to the annual meeting of the Commission as part of the process to review the proceedings. The United States noted that North Atlantic swordfish and West Atlantic skipjack (W-SKJ) are on the same track with the expectation that a management procedure will be adopted at the 2023 ICCAT annual meeting. For the multi-stock Atlantic tropical tunas MSE, it is more complex and work is proceeding at a slower pace. The SCRS Chair noted that the collaboration and exchange of input will be essential for the SCRS to make progress on the multi-stock MSE for tropical tunas. He also noted that there may be a need to find opportunities for more exchange between managers and scientists on the W-SKJ MSE than this one meeting given the iterative nature of the process to identify top performing CMPs.

5. Update on the work developed by the SCRS

5.1 Brief review on the multi-stock tropical tunas MSE (multi-stock MSE)

Dr Gorka Merino (EU) presented a review on the multi-stock Atlantic tropical tunas MSE, describing the 2022 Intersessional Meeting of Tropical Tunas Technical Sub-group on MSE to present operational models and the eastern SKJ stock assessment conducted in June 2022, as well as the 2023 Intersessional Meeting of the Tropical Tunas Technical Sub-group on MSE where multi-stock objectives were discussed. He described the general strategy of MSE: identification of management objectives, uncertainties, operating models, and parameters. Dr Merino also explained the assessment of uncertainty, development of management procedures, and interpretation of performance statistics. He noted that all technical work for this MSE could be finished by next year.

One CPC highlighted the challenging negotiations for a revised conservation and management measure on tropical tunas, which, if not resolved soon, could impact the ability of the Commission to agree on a management procedure for these stocks. She also noted that ensuring multi-stock MSE is properly funded should be prioritized. The SCRS Chair explained that the status of one stock is usually taken with the other stocks, and that questions on funding will be discussed at the SCRS level. The SCRS Chair reinforced the importance of providing a framework to explore different options for MSE since they serve as a tool for examining procedures, not just as a tool for management.

Dr Merino confirmed the current goal is to submit CMPs for review and adoption by the Commission at the annual meeting in November 2024, although this could change.

One CPC noted that the development of MSE requires Panel 1 to provide direction to the SCRS on management objectives as had been done for other priority species. She noted that Panel 1 may need to consider this issue at the 2023 annual meeting, noting the SCRS request that Panel 1 adopt conceptual management objectives this fall. She noted, however, that making progress on this matter this November could be a challenge because of how busy Panel 1 will be in 2023, the more complex nature of developing management objectives for a multi-stock fishery, and, as noted, the current lack of agreement on a longer-term conservation and management measure for tropical tunas.

Dr Merino commented that the SCRS could still continue work on the MSE in the absence of formal adoption of management objectives for tropical tunas by Panel 1 this fall. A CPC expressed some doubt that a management procedure could be adopted in 2024 without identification of conceptual management objectives by Panel 1 in 2023 and a robust intersessional SCRS-Panel 1 dialogue process, such as that followed for bluefin tuna.

5.2 Detailed review on the western Atlantic skipjack MSE (W-SKJ MSE)

The SCRS Chair noted a primary difference in the western Atlantic skipjack MSE compared to the multi-stock MSE, distinguishing that the western Atlantic SKJ fisheries are not utilizing FADs and therefore W-SKJ are not caught in association with juvenile YFT or BET. The SCRS Chair summarized that the 2022 stock assessment of biomass is above B_{MSY} and mortality is below F_{MSY} , so the stock is well in the green.

One CPC asked about the effect of FADs drifting westwards on fish moving westwards, and whether this has been considered in the context of W-SKJ MSE. The SCRS Chair acknowledged that as the FAD fishery increases, efforts continue westward to fish on FADs and have crossed the designated East-West stock boundary for SKJ. The SCRS Chair hypothesized that this new purse seine activity to the west of the boundary may be catching part of the eastern stock instead of the western stock, as currently assumed. The SCRS Chair concluded that the SCRS has considered this potentially valid hypothesis, but there is not enough data to change our stock structure assumptions.

In response to a question about whether rivers in Brazil discharging into the ocean create an ecological barrier that affects skipjack movements, the SCRS Chair clarified that the SCRS recognizes the impact as a barrier for other species, but it has not yet been evaluated and the SCRS maintains its stock structure hypothesis.

Brazil replied that although there are some results related to new genetics studies on the W-SKJ stock, the current data do not suggest that the West/East stock structure is inappropriate. Brazil suggested that if the current stock's structure is changed, the MP can be reevaluated in a future iteration or a robustness test on alternative stock structure could be conducted. Another CPC replied that a robustness test is not needed, but may become an issue in the future unless the SCRS can do work on this.

6. Items requiring consideration from Panel 1 regarding the W-SKJ MSE

The SCRS Chair discussed reference and robustness sets within operating models and explained that the W-SKJ candidate management procedures illustrate dynamics of constant catch, empirical, and model-based management procedure. Currently, there are 14 candidate management procedures being evaluated, with 4 model-based approaches being considered across the CMPs.

Panel 1 reviewed performance results for seven representative CMPs. The SCRS Chair highlighted that input is needed to operationalize these objectives. For the seven representative CMPs, as currently configured, all but the constant catch scenario have a high probability of being in the green quadrant (stock is not overfished and not subject to overfishing). With no further adjustments, W-SKJ will remain in the green.

The SCRS Chair then moved on to discuss Management objectives for the W-SKJ MSE:

- Status was defined as: The stock should have a XX or greater probability of occurring in the green quadrant of the Kobe matrix using a X-year projection period as determined by the SCRS. The SCRS determined 30 years, but this is tentative until the Commission adopts these decisions.
- Safety: There should be no greater than XX% probability of the stock falling below B_{LIM} .
- Stability: Any change in TAC between management periods should be XX% or less: there would be no change in management cycling. If Panel 1 wishes to look at different cycles, there are scaled alternatives (TAC not varying more than 20%).

One CPC asked if the timeframes are different from bluefin tuna, and how Panel 4 is considering this matter with North Atlantic swordfish. They asked if there is a biological reason to handle this aspect differently and if there are implications in considering different time horizons.

The SCRS Chair noted that, although differences in biology might mean different responsiveness to changes in management, other considerations include evaluating the performance of CMPs over longer periods, as well as the preferred timeframes of stakeholders and managers. But if there are alternative suggestions for timeframes they would be considered.

6.1 and 6.2

- ***Stock Status - Minimum acceptable probability of occurring in the green quadrant of the Kobe matrix using a 30-year projection period (as determined by the SCRS)***
- ***Safety - Maximum acceptable probability of the stock falling below $0.4SSB_{MSY}$ (the B_{LIM} recommended by the SCRS) at any point during the 30-year projection period***

Agenda items 6.1 and 6.2 were discussed together.

The SCRS Chair reviewed the following operational management objectives:

- Stock status: minimum acceptable probability of green Kobe (PGK) using a 30-year projection period.
- Safety: Maximum acceptable probability of the stock falling below $0.4SSB_{MSY}$ at any point during the 30-year projection period.
- Stability: Maximum acceptable percent change in TAC between management periods.

On stock status: One CPC expressed that 50% and 60% in the green quadrant is too low, but a 70% threshold would be agreeable. A 70% threshold was agreed upon for PGK.

One CPC noted they do not oppose the 70%, but stressed that it does not set a precedent for other MSEs. The SCRS Chair responded that in cases such as bluefin, the SCRS will likely have to modify things to meet the criteria. When exploring lower tolerances, the PGK performance would go up as a consequence and shift uncertainty higher in stock status.

On safety: The SCRS Chair asked what the maximum acceptable probability going below B_{LIM} would be, and 5%, 10% and 15% were mentioned. The SCRS Chair asked what probability can be agreed upon as a starting point for testing the CMPs.

An observer requested that developers of CMPs be flexible so that other targets can be achieved. They noted being precautionary on the status, on this limit, as well as 5% and 10%. However, exceeding 10% would be dangerous for other species like blue marlin and yellowfin.

On stability: One CPC supported the testing of symmetrical and asymmetrical 20% or 30% and recognized that if more options are tested, more outcomes can be considered. They asked if northern albacore can apply to western skipjack by testing a no-limit scenario.

The SCRS Chair summarized that a 10% maximum acceptable probability is an acceptable number to many parties, with the potential to explore reducing.

The SCRS Chair noted that with the continuous evaluation and structuring of CMPs, there is not a separate constraint on TAC changes; instead performance is reported with respect to the level of increases and decreases. The SCRS Chair asked a CPC if evaluating CMPs for stability and vulnerability is an acceptable approach, or only if a party is evaluating performance on output statistics. The CPC demonstrated flexibility on the idea of no limit, but if stability rules are needed, other options should be explored since if the stock falls out of the green, they do not want to see limits on TAC decreases. The SCRS Chair concluded that Panel 1 should proceed as has been done so far, with the option of calling for a CMP modification if it is not performing to expectations.

On modeling approach: The SCRS Chair noted that constant catch CMPs were included primarily as they are useful for confirming dynamics are working as expected for simple harvest control. Other management procedures have the ability to take into account more current information on stock status or trends, and should therefore have greater ability to address the various management objectives. The SCRS Chair proposed removing those CMPs with constant catch from the set that is being tested. One CPC agreed that we need to have different parameters in the CMPs, although constant catch is good for comparison. The SCRS Chair clarified that constant catch scenarios would not be optimized for performance as would other CMPs, but could continue to be used when presenting results to contrast other approaches.

6.3 Yield - Maximize overall catch levels in the short (1-3 years), medium (4-10 years) and long (11- 30 years) terms

The SCRS Chair requested feedback on timeframes to produce statistics within the SCRS, creating a thorough discussion. One CPC led with a comment on overfishing statistics, confirming this is not input on actual management objectives. The SCRS Chair agreed, and stated that CMPs need a specific timeframe to evaluate management objectives.

One CPC suggested they are flexible with what is being proposed as short, medium and long, but questioned whether the timescale should be shorter than 30 years given the lifecycle of the stock. The SCRS Chair reminded Panel 1 that it could be calculated over a different timescale, but the SCRS is not planning to vary from this timescale or proposed timeframes unless requested by Panel 1. The SCRS Chair explained these are statistics to evaluate the performance and whether it is being constrained, and that it can be changed to 30% based on results and input. The SCRS Chair noted that if Panel 1 indicates a preference for a higher probability of avoiding falling below B_{LIM} , those restrictions can be tightened.

6.4 Stability - Maximum acceptable percent change in TAC between management periods

One CPC asked whether climate change can be added to the robustness tests, and the SCRS Chair responded that there have already been approaches to consider climate change impacts. The SCRS Chair stated the approach with bluefin shows different stock recruitment relationships changing when going from one stock to another. Unless there is stronger evidence to include such climate change considerations in the base set of operating models, the SCRS Chair suggested productivity in the stock, changes in variability and recruitment potential could exist in robustness tests, although this could take considerable time. There was debate as to whether it is practical to include it this year, or to prioritize evaluating whether it is an exceptional circumstance for next year. A CPC noted that effects on the variability of recruitment and other effects are planned to be tested, but at this stage it would be next year before this work could be accomplished.

One CPC asked if the minimum TAC change threshold was being considered in the MSE process. They followed up on whether evaluating the minimum TAC change threshold in a robustness test would give a sense of how adoptable a minimum TAC change threshold would be.

The SCRS Chair noted it has not been considered, but will carry out evaluation on the tests that Panel 1 selects. The SCRS Chair stated that robustness testing can be done with the leading CMP, but may best be done when Panel 1 has identified the CMP they want to propose at the Commission meeting, and identify if there can be a minimum threshold TAC change without adversely affecting performance.

An observer asked if there are other aspects of the model that can be considered as a proxy (i.e., recruitment variability). The SCRS Chair responded that studies have been expanded to examine recruitment variability but the Group has recommended alternative approaches to analyze climate change. One CPC concurred that reference points and more on these projections of B_{LIM} are needed. This discussion concluded with the SCRS Chair confirming the SCRS is recommending a B_{LIM} of 0.4.

6.5 *Performance statistics - Any changes or additions to the candidate management procedure performance statistics proposed by the SCRS*

The SCRS Chair asked a final question about applying management procedures and exploring a longer or shorter cycle. The SCRS Chair explained shortening can increase the ability of MP to adjust based on management trends, but increases workload for science and management, and frequency of changes in TAC. On the other hand, longer cycles give greater stability within the management cycle and reduce workloads, but would increase the potential that if there is a change, it will be larger. With no objections, the SCRS Chair suggested continuing with the current 3-year management cycle.

The SCRS Chair summarized the criteria agreed upon at this meeting, which included 70% or more in the green (status), 10% or less falling below B_{LIM} (safety), and continuing with 3-year management cycles. One CPC reserved its position on the deliberation of the management cycle.

6.6 *Other topics requiring input from Panel 1*

No matters were raised under this agenda item.

7. Other matters

No matters were raised under this agenda item.

8. Adoption of report and closure

The SCRS Chair thanked Panel 1 members for their attendance, the ICCAT Secretariat, and interpreters. It was agreed that the meeting report would be adopted by correspondence and the meeting was adjourned.

Agenda

1. Opening of the meeting and meeting arrangements
2. Appointment of Rapporteur
3. Adoption of agenda
4. Review of the tropical tunas MSE framework (Commission roadmap)
5. Update on the work developed by the SCRS:
 - 5.1 Brief review on the multi-stock tropical tunas MSE (multi-stock MSE)
 - 5.2 Detailed review on the western Atlantic skipjack MSE (W-SKJ MSE)
6. Items requiring consideration from Panel 1 regarding the W-SKJ MSE:
 - 6.1 Stock Status - Minimum acceptable probability of occurring in the green quadrant of the Kobe matrix using a 30-year projection period (as determined by the SCRS)
 - 6.2 Safety - Maximum acceptable probability of the stock falling below $0.4SSB_{MSY}$ (the B_{LIM} recommended by the SCRS) at any point during the 30-year projection period
 - 6.3 Yield - Maximize overall catch levels in the short (1-3 years), medium (4-10 years) and long (11-30 years) terms
 - 6.4 Stability - Maximum acceptable percent change in TAC between management periods
 - 6.5 Performance statistics - Any changes or additions to the candidate management procedure performance statistics proposed by the SCRS
 - 6.6 Other topics requiring input from Panel 1
7. Other matters
8. Adoption of report and closure

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