



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

**Northern Committee
Eighteenth Regular Session**

**Electronic Meeting
4-6 October 2022**

SUMMARY REPORT

Acknowledgements

The financial, logistical and administrative support provided by the Western and Central Pacific Fisheries Commission Secretariat and all Members of the Northern Committee are gratefully acknowledged. Mr. Masanori Miyahara, who chaired the Eighteenth Regular Session of the Northern Committee, and Mr. Alex Meyer, who served as the rapporteur for the meeting, are acknowledged with appreciation.

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**The Commission for the Conservation and Management of
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SUMMARY REPORT

AGENDA ITEM 1 — OPENING OF MEETING

1. The Eighteenth Regular Session of the Northern Committee (NC18) took place electronically, on 4-6 October 2022. The meeting was attended by Northern Committee (NC) Members from Canada, China, Fiji, Japan, Republic of Korea (ROK), Philippines, Chinese Taipei, United States of America (USA) and Vanuatu and Observers from New Zealand, Palau, the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), Pacific Islands Forum Fisheries Agency (FFA), Seafood Legacy, The Ocean Foundation, The Pew Charitable Trusts (Pew) and World Wide Fund for Nature (WWF). The list of meeting participants is in **Attachment A**.

1.1 Opening of meeting

2. M. Miyahara, Chair of the NC, opened the meeting.

1.2 Adoption of agenda

3. The provisional agenda was adopted without modification (**Attachment B**).

1.3 Meeting arrangements

4. The Chair outlined the schedule of the meeting.

5. Mr. Alex Meyer (Japan) was appointed as rapporteur for the meeting.

1.4 Report from ISC and SC

1.4.1 Report from ISC

6. J. Holmes, ISC Chair, provided the following summary of the outcomes of the 22nd Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC22). The ISC22 Plenary was held in person in Kona, Hawaii, USA on July 12 – 18, 2022.

An update assessment was conducted for Pacific bluefin tuna (PBF), using 1952 – 2020 data. The model structure was the same as the 2020 assessment, with minor changes and errors corrected, and 2 years of additional data inputs. PBF spawning stock biomass (SSB) has gradually increased in the last 10 years. The rate of increase is accelerating and these biomass increases coincide with a decline in fishing mortality. The recovery of the PBF stock is occurring at a faster rate than anticipated when the Harvest Strategy to foster rebuilding was implemented in 2014. Under all

projections scenarios tested, the second rebuilding target (20%SSB⁰ 10 years after reaching the initial rebuilding target) will be achieved by 2029 with at least 60% probability.

A benchmark assessment was conducted for North Pacific Ocean blue shark (BSH) with 1971 – 2020 data. The model structure was the same as the 2017 assessment, but a Beverton Holt stock-recruitment (SR) was used rather than a low fecundity SR. A model ensemble approach was taken. The assessment showed that SSB declined from the mid-1970s to 1990 and has since increased and stabilized around 100,000 t through the 2000s. Median estimates of current SSB are about SSB_{MSY}.

A benchmark assessment was planned for Western and Central North Pacific Ocean striped marlin (WCNPO MLS) in 2022. The Billfish Working Group (BILLWG) implemented several improvements to address data and model uncertainties, which were endorsed by ISC22. However, the ISC considers this modeling to be a work in progress because of a significant issue with the choice of growth curve, which does not fully represent stock productivity. ISC22 approved the work plan to explore the growth curve issue and complete a benchmark assessment. ISC22 concluded that it cannot provide stock status and conservation information based on the 2022 work. Instead, information based on the 2019 assessment is provided until the new assessment is completed in 2023.

The ISC conducted analyses in response to the request from WCPFC18 that the ISC derive the appropriate time frame for calculating the dynamic SSB₀ on which the rebuilding target for WCNPO MLS shall be based. The ISC concluded that a 20-year period should be used to estimate dynamic B₀ reference points for this stock. Potential reference points will be reported as 20% of the SSB_{F=0}, where SSB_{F=0} is averaged over the last 20 years (2001 – 2020). This time period corresponds to about 4 mean generation times for WCNPO MLS. It is important to periodically evaluate whether the time window is still appropriate for dynamic B₀ calculations.

As for other species, the ISC reiterated stock status and conservation information provided at ISC21 for North Pacific Albacore (NPA), Western and Central Pacific Ocean Swordfish, Eastern Pacific Ocean Swordfish (EPO SWO), Pacific Blue Marlin (BUM), and North Pacific Shortfin Mako Shark (SMA). It should be noted that there has been a boundary change for Eastern Pacific swordfish, which will become part of the Western and Central North Pacific Ocean and Southeastern Pacific Ocean stock going forward.

The Statistics Working Group (STATWG) continues to make progress in cataloguing ISC data and making data and assessment files more accessible and available for use by researchers external to the ISC.

The ISC work plan for 2022-23 includes benchmark stock assessments of NPALB, WCNPO MLS and WCNPO SWO, continuing to advance biological sampling for billfish and shark species with a status update on efforts to date, providing technical workplans for the PBF MSE process and feedback on management objectives, developing a data and stock assessment file request process and procedures, continued implementation of enhancements to database and website management, reviewing the operation and functions of the MOU and MOC with the WCPFC and IATTC, respectively, continuing the process of formalizing the ISC, and beginning to plan for the third peer review of the ISC function and process.

Elections for the Chair and Vice-Chair of the ISC will be conducted at the next Plenary meeting, which will be hosted by Japan, July 12-17, 2023, at a location and venue to be determined.

7. Japan noted that the PBF stock assessment indicates that the stock is continuing to recover. The WCPFC agreed to a 15% increase in the catch limit for large fish at last year's meeting but the increase in the catch limit has not caught up with the stock recovery indicated by the stock assessment. The second rebuilding target might be achieved far ahead of 2029. Japan believes that it is very important to facilitate discussion on the development of the harvest strategy and will make every effort to work with other countries to do so, as well as to strengthen fishery management schemes, including the development of a catch documentation scheme (CDS), in order to reduce uncertainty about the stock and fisheries, and to adopt an appropriate catch limit corresponding to the stock status.

8. The NC noted the Report of ISC22 (NC18-IP-01) as reviewed.

1.4.2 Report from SC

9. SK Soh (WCPFC) summarized the key outcomes from the 18th Regular Session of the Scientific Committee (SC18).

SC18 was held as an electronic meeting on 10-18 August 2022. The meeting was chaired by Tuikolongahau Halafihi (Tonga). The provisional total tuna catch in the Convention Area for 2021 is 2,493,571 mt, comprising 87% of the total Pacific Ocean catch and 56% of the global tuna catch, with a value of \$4.6 billion. The SC considered the stock status and management advice provided by the SPC for skipjack tuna, Southwest Pacific blue shark, Southwest Pacific shortfin mako shark and stock status and conservation information provided from the ISC for PBF, NP BSH, and WCNPO MLS. The SC continues to work on the development of a harvest strategy framework for skipjack and SP albacore tuna. In relation to ecosystem and bycatch mitigation, the SC discussed ecosystem and climate indicators and shark bycatch mitigation measures. In terms of the 2023 Work Program and Budget, key SPC services for 2023 includes bigeye stock assessment, yellowfin stock assessment, and skipjack stock assessment updates. The next meeting dates will be 16 – 24 August 2023, and Palau will confirm its hosting of SC19 at WCPFC19. Details are available in the *SC18 Outcomes Document* (NC18-IP-02).

AGENDA ITEM 2 — CONSERVATION AND MANAGEMENT MEASURES

2.1 Pacific bluefin tuna (CMM 2021-02)

10. D. Lowman, the IATTC Co-Chair of the Joint IATTC and WCPFC-NC Working Group Meeting on the Management of PBF (JWG), presented the outcomes of the 7th JWG as outlined in the Chairs' Summary (**Attachment C**).

11. The ROK presented NC18-DP-01, a proposal for amendments to CMM 2021-02 to include an alternative management plan for PBF caught in the ROK's set net fisheries in its territorial waters.

12. Japan expressed appreciation for the efforts by the ROK to manage the PBF stock and understanding for the difficulty ROK is facing in managing PBF caught in its set net fisheries, which Japan shares. However, Japan expressed concern about the proposal, noting that it has not been discussed and reviewed by the JWG, and that the proposal would seem to allow the unlimited catch of PBF in set nets. Japan also offered to share its techniques developed with fishers for the safe release of PBF caught in set nets.

13. The FFA members of the NC (the Cook Islands, Fiji, and Vanuatu), acknowledged that the PBF SSB has gradually increased in the last 10 years and the rate of increase is accelerating, but pointed out that the current SSB of PBF is only 10.2% of the unfished level, well below the limit reference point (LRP) adopted for the key tuna species in WCPFC and suggests that the PBF stock remains overfished relative to

the LRP of key tuna species. The FFA members were of the view that the discard rate of PBF from set net fisheries in the territorial waters of the ROK is a clear contravention of paragraph 8 of CMM 2021-02 and needs to be rectified immediately, especially since NC18-IP-04 suggests an increasing trend of PBF catch in the set net fishery. The FFA members expressed reluctance to support the proposal as currently worded, as it could increase the amount of PBF harvested to above the levels allowed in CMM 2021-02 for 2023 and 2024. This position is consistent with the recommendation made by SC18 that the Commission exercise a precautionary approach when it considers any revision to the current CMM.

14. The United States shared the concerns expressed by Japan, while recognizing the difficulties faced by the ROK. The United States also supported the comments made by the FFA members regarding the status of the rebuilding of the PBF stock and the need for a precautionary approach.

15. The ROK presented a revised proposal (NC18-DP-01 (rev.01)) that included a limit of 300 metric tons for PBF bycaught in set net fishery allowed for domestic consumption or sale beyond national catch limit.

16. Japan, the United States, and the FFA members thanked the ROK for the revised proposal. While continuing to express reservations about the proposal, they also expressed their willingness to continue to discuss it further in future. The ROK thanked those CCMs for their comments and expressed its intention to continue to work with interested CCMs to further develop the proposal, explaining that its set net fishermen do not have necessary release techniques yet and therefore it needs some transitional period as proposed in the interim management plan for development of release techniques and provision of adequate education to its set net fishermen.

17. The NC agreed to continue to develop the proposal at the JWG08 meeting and the NC19 meeting. The draft proposal is included as **Attachment D**.

18. The ROK expressed its intention to make a statement on this issue at the Commission for further discussion.

19. The NC reviewed the compiled catch and effort information for PBF in NC18-WP-02.

20. **In order for the ISC to conduct the stock assessment based on the best available data, the NC requests the Commission to encourage its non-ISC CCMs to review and make necessary correction to their historical PBF catch data submitted to the Secretariat.**

21. The NC agreed to work intersessionally to develop a CDS for PBF.

2.2 North Pacific albacore (CMM 2019-03)

2.2.1 Reports from CCMs and Observers

22. The NC reviewed the compiled catch and effort information for NPA in working paper NC18-WP-01 (Rev.01).

23. Japan reiterated its concern, expressed at NC17, over the setting of Vanuatu's baseline effort data using the number of licensed vessels in 2004, and asked Vanuatu to provide an update on any developments since NC17.

24. Vanuatu explained that it has continued to make efforts to obtain additional reliable information for setting its baseline effort data, including coordinating with the SPC. Nevertheless, the only reliable

information it has is the number of licensed fishing vessels, and of the data for 2002 – 2004, that for 2004 is the most complete. Therefore, Vanuatu expressed its intention to continue to use a baseline based on the number of licensed fishing vessels in 2004.

25. Japan requested that Vanuatu share information about the number of licenses issued in 2002 and 2003 with the NC. The United States requested that Vanuatu provide said information in writing, and that it also provide a summary of what information is available and what is not.

26. Vanuatu expressed its intention to provide its response as a formal note to the Commission and its willingness to work with Japan and the United States to resolve this matter before the next NC meeting.

2.2.2 Interim Harvest Strategy for North Pacific Albacore Fishery (HS 2017-01)

27. The Chair presented NC18-WP-03 (Rev.01), a draft harvest strategy of the WCPFC for NPA that mirrors the harvest strategy adopted by the IATTC.

28. The NC reviewed and revised the proposal.

29. **The NC recommends that the Commission adopt the harvest strategy of the WCPFC for NPA in Attachment E.**

2.2.3 Review of the CMM 2019-03

30. There were no proposals to amend CMM 2019-03.

2.3 North Pacific swordfish

31. Japan presented NC18-DP-02 (Rev.01), a draft CMM for North Pacific swordfish (NPS).

32. Some CCMs requested more clarity in relation to the areas of application and whether the proposal would be applicable not only to fisheries that target or fish for NPS but also to fisheries that don't.

33. The NC reviewed and revised the proposal as outlined in NC18-DP-02 (Rev.04).

34. The NC discussed that the proposed measures are meant to be applied to fisheries that take NPS regardless of targeting or fishing for the species. The NC noted that CCMs could consider the plural effort metrics in Annex 1 to this CMM in their entirety and that in the case of fisheries that take NPS as bycatch, the metric of "fishing days" may not be appropriate for assessing the compliance with the effort control provision since it is impossible for such fisheries to control fishing days.

35. **The NC recommends that the Commission adopt the Conservation and Management Measure for NPS in Attachment F.**

36. The United States explained that it issued 164 limited entry permits in 2008-10.

37. The NC requested Chinese Taipei to circulate information to NC members about the number of vessels licensed during 2008-2010 in advance of the Commission meeting.

38. The NC noted that the proposed CMM is limited to north of 20° N and agreed to consider this issue at NC19.

39. **The NC requests that the ISC BILLWG conduct an analysis of how catch and effort for NPS varies spatially in the North Pacific, with the aim of estimating the proportion of catch and effort north and south of 20° N in the Convention and including this information in the 2023 stock assessment for NPS.**

40. The NC reviewed the compiled catch and effort information for NPS in working paper NC18-IP-05 (Rev.01).

AGENDA ITEM 3 — FUTURE WORK PROGRAMME

3.1 Work Programme for 2023-2025

41. The NC reviewed and adopted the 2023-2025 Work Programme for the Northern Committee (**Attachment G**).

AGENDA ITEM 4 — OTHER MATTERS

4.1 Election of Officers

42. **The NC recommends that the terms of the current Chair, M. Miyahara (Japan), and the current vice Chair, M. Tosatto (USA), be extended for two years.**

4.2 Next meeting

43. **Japan offered to host the NC19 meeting in conjunction with the JWG8 meeting in Fukuoka in early July, with the date to be determined after consultation among members and both RFMO secretariats. The Chair suggested the possibility of having a separate NC meeting online in September to finalize its outcomes next year. The arrangement of the next meeting will be notified well in advance.**

4.3 Other business

44. There was no other business.

AGENDA ITEM 5 — CLOSE OF MEETING

45. The NC reviewed and adopted the Summary Report.

46. The meeting was brought to a close on 6 October 2022.

Commission for the Conservation and Management of
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NORTHERN COMMITTEE
EIGHTEENTH REGULAR SESSION

ELECTRONIC MEETING
4 – 6 October 2022

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

**NORTHERN COMMITTEE
EIGHTEENTH REGULAR SESSION**

**ELECTRONIC MEETING
4 – 6 October 2022**

AGENDA

AGENDA ITEM 1 — OPENING OF MEETING

- 1.1 Opening of meeting**
- 1.2 Adoption of agenda**
- 1.3 Meeting arrangements**
- 1.4 Report from ISC and SC**
 - 1.4.1 Report from ISC
 - 1.4.2 Report from SC

AGENDA ITEM 2 — CONSERVATION AND MANAGEMENT MEASURES

- 2.1 Pacific bluefin tuna (CMM 2020-02)**
- 2.2 North Pacific albacore (CMM 2019-03)**
 - 2.2.1 Reports from CCMs and Observers
 - 2.2.2 Interim Harvest Strategy for North Pacific Albacore Fishery (HS 2017-01)
 - 2.2.3 Review of the CMM 2019-03
- 2.3 North Pacific swordfish**

AGENDA ITEM 3 — FUTURE WORK PROGRAMME

- 3.1 Work Programme for 2023-2025**

AGENDA ITEM 4 — OTHER MATTERS

- 4.1 Election of Officers**
- 4.2 Next meeting**
- 4.3 Other business**

AGENDA ITEM 5 — CLOSE OF MEETING

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

**NORTHERN COMMITTEE
EIGHTEENTH REGULAR SESSION**

ELECTRONIC MEETING
4 – 6 October 2022

**CHAIRS' SUMMARY OF THE 7TH JOINT IATTC AND WCPFC-NC WORKING GROUP
MEETING ON THE MANAGEMENT OF PACIFIC BLUEFIN TUNA**

Agenda Item 1. Opening of the meeting

1. The 7th Session of the Joint IATTC and WCPFC-NC Working Group Meeting on the Management of Pacific Bluefin Tuna (JWG07) was held on 12-14 July 2022. The meeting was opened by co-chairs Mr. Masanori Miyahara (Japan, Northern Committee Chair) and Ms. Dorothy Lowman (USA, IATTC).
2. A list of participants to the JWG07 is included in **Annex A**.
3. Mr. Alex Meyer (Japan) was appointed as rapporteur for the meeting.

Agenda Item 2. Adoption of Agenda and Meeting Procedures

4. Co-Chair Miyahara welcomed participants and outlined the meeting procedures and the agenda.
5. The provisional agenda was adopted (**Annex B**).

Agenda Item 3. Scientific Information on Pacific Bluefin Tuna

3.1 Updates on the stock status of Pacific bluefin tuna

6. Dr. H. Fukuda, the lead modeler for the ISC Pacific Bluefin tuna WG (PBFWG), made a detailed report on the latest stock assessment for PBF conducted in March 2022. As this assessment was a data update assessment, the PBFWG developed the base case model, which is basically consistent with the 2020 assessment, with the most recent two years (2019-2020 fishing year (FY)) data.
7. The base-case results show that: (1) spawning stock biomass (SSB) fluctuated throughout the assessment period (1952-2020); (2) SSB steadily declined from 1996 to 2010; (3) the SSB has increased since 2011 resulting in the 2020 SSB being back to the 1996 level, which is higher than the initial rebuilding target of this stock (historical median SSB during 1952-2014); (4) total biomass after 2011 continued to increase with an increase in young fish, creating the 2nd highest biomass peak in the assessed history in 2020; (5) fishing mortality (F%SPR), which declined to a level producing about 1% of SPR in 2004-2009, returned to a level producing 30.7% of SPR in 2018-2020; and (6) SSB in 2020 was 10.2% of SSB₀, an increase from the 5.6% of SSB₀ estimated for 2018 in the 2020 assessment (2018 was the last year of the 2020 assessment).
8. The projection results from all examined scenarios showed that the second rebuilding target of WCPFC

and IATTC, rebuilding to 20%SSB₀ by 2029 FY (10 years after reaching the initial rebuilding target) with at least 60% probability, is reached, and the risk of SSB falling below the historical lowest SSB at least once in 10 years is negligible. The PBFWG evaluated projection results of sensitivity models with lower natural mortality, larger asymptotic length in the growth function, lower steepness, or the recent recruitment monitoring index fit. Though projection results from these lower productivity models are more pessimistic than that from the base-case model, the PBFWG concluded that the current advice is robust to these alternative model assumptions.

3.2 Reports from WCPFC-Scientific Committee (SC) and IATTC-Scientific Advisory Committee (SAC)

9. Dr. Alex da Silva (IATTC) discussed the information presented at the 13th IATTC-SAC meeting, including the updated stock assessment and the rebuilding targets and harvest strategies for PBF, and the following IATTC scientific staff recommendations on PBF:
 - a) No changes are needed to the provisions under Resolution C-21-05.
 - b) Increased catches are possible under the proposed harvest strategy. The choice of catch scenario should take into account:
 - i. Desired rebuilding rate
 - ii. Distribution of catch between small and large fish
10. The IATTC-SAC did not have any further recommendations for PBF.
11. The report of the 18th WCPFC-SC meeting was unavailable because it has not yet convened.

Agenda Item 4. Reports on the implementation of Pacific bluefin tuna measures

12. The Joint WG reviewed WCPFC and IATTC members' implementation reports on conservation and management measures for PBF.
13. Chinese Taipei and Japan identified discrepancies among each other's import/export data and agreed to cross-verify these data.
14. Japan emphasized the importance of including international trade statistics in members' implementation reports.
15. The JWG noted that WCPFC CMM 2021-02 applies to PBF catch for the whole of the Convention Area, rather than just PBF caught north of the equator, and that some CCMs are either not reporting such information or not reporting it correctly.
16. The JWG reviewed a table showing PBF fishing effort and catch in the Western and Central Pacific Ocean (WCPO) by member (**Annex C**).
17. Co-Chair Miyahara requested that a similar table be compiled for the Eastern Pacific Ocean (EPO), stating that having such information for both the EPO and WCPO would be fundamental to future discussions about balance between the two.
18. The United States and Japan requested that members' future reports include members' recreational catch and monitoring information.

Agenda Item 5. Review of Conservation and Management Measures for Pacific Bluefin Tuna

19. The JWG reviewed the current Pacific bluefin tuna measures, WCPFC CMM 2021-02 and IATTC Resolution C-21-05, and did not recommend any revisions to either measure.

Agenda Item 6. Catch documentation scheme

20. Mr. Shingo Ota (Japan), the Chair of the Catch Documentation Scheme (CDS) Working Group, presented the outcomes of the 3rd CDS Technical Meeting. A Chair's Summary Report of the meeting is included as **Annex D**.
21. In addition, Mr. Ota informed the JWG that he confirmed with Japan following the 3rd CDS Technical Meeting that Japan intends to continue to lead intersessional discussions to develop the draft CMM for the establishment of a CDS for PBF.

Agenda Item 7. Further Development of Long-Term Harvest Strategy (post rebuilding)

7.1 Discussion of possible operational objectives and other elements necessary to further evaluate candidate harvest control rules and reference points

22. Dr. Shuya Nakatsuka, Chair of the ISC PBFWG, presented the MSE related work done by the ISC. The ISC PBFWG discussed the scientific framework for MSE of PBF, which is requested by the RFMOs to be completed by 2024. This year the PBFWG reviewed an assessment model with short-term data. The short-term model was consistent with the current assessment model and yet allows more flexible assumptions than the current assessment model, which is important for MSE to address plausible uncertainties. The PBFWG agreed to use this model as a basis for the development of the operating models for the PBF MSE. The PBFWG also considered it appropriate to use the framework of albacore MSE for evaluation of management procedures. The PBFWG is in a good position to start development of MSE of PBF but for MSE to be properly conducted, input from managers is indispensable in particular on management objectives. The PBFWG discussed the timing for MSE and stock assessment. The next benchmark assessment is scheduled for 2024 while MSE is also requested to be completed in 2024. The PBF stock is projected to be close to the second rebuilding target in 2022 FY. The PBFWG considers that the stock assessment work is the priority and is seeking ISC Plenary approval for this to be conveyed to the RFMOs.
23. The United States presented a proposed list of candidate operational management objectives and performance indicators for PBF, developed after engagement with US stakeholders. The proposal contains four main categories of objectives: safety, status, stability, and yield. The United States discussed the importance of including a management objective related to proportional fishery impact that is reflective of historical fishing before the stock declined so significantly. The United States acknowledged the proportional fishery impact is a question of allocation but noted that it can be tested in MSE and is important to consider what the tradeoffs are with other objectives.
24. Japan stated that harvest control rules, management objectives, and candidate reference points are interdependent and should be discussed together in a holistic manner.
25. Japan disagreed with the proposed inclusion of an operational management objective to maintain a proportional fishery impact between the WCPO and EPO and suggested that this was an issue for discussions of allocation based on the outcomes of the MSE, rather than a management objective for the MSE.
26. The United States noted that the operational management objectives were derived from management objectives that have already been agreed to in the WCPFC harvest strategy for PBF, and that the issue

of the balance of fisheries is one of the reasons the JWG was formed. The United States suggested that understanding and evaluating the fishery impact between the EPO and WCPO through the MSE would be valuable for maintaining the appropriate biomass level and would better inform allocation decisions.

27. Dr. John Holmes, the ISC Chair, encouraged the JWG to narrow down the list of reference points and harvest control rules, as every combination of them will need to be tested.
28. Dr. Nakatsuka explained that the management procedure to be developed may not use the same model as the stock assessment model as that would make the process very time-consuming. A simpler model may be used instead and in that case management objectives that are dependent on the stock assessment model, such as those that use probability derived directly from the stock assessment model, may not be evaluated easily.
29. Dr. Maunder, IATTC staff, noted that objectives do not necessarily have to follow a narrow prescription with thresholds and probability statements as they may not necessarily fit the objective and may be difficult to calculate.
30. Based on this discussion, the JWG amended the proposed list (**Annex E**) but was unable to finalize it during the meeting. The JWG agreed to continue to discuss the proposed list at its next meeting and encouraged members to seek further input from their stakeholders during the intersessional period to facilitate the future discussions. The JWG also agreed to forward the current tentative list to the ISC PBFWG and invite the PBFWG's comments.

7.2 Consideration of approaches including way to further a MSE process or other options

31. The United States presented a proposal for the establishment of an interim harvest strategy for the period from the year in which the stock is projected to achieve the second rebuilding target to when a long-term harvest strategy based on a MSE process is implemented.
32. The JWG discussed and amended the US proposal (**Annex F**) but was unable to reach consensus during the meeting. The JWG agreed to continue to discuss the proposal at its next meeting.

7.3 Next steps

33. The United States presented a proposal for a work plan for conducting a MSE for PBF.
34. The JWG discussed and amended the US proposal, and developed a work plan for developing a harvest strategy, including a MSE, for PBF (**Annex G**).

Agenda Item 8. Next JWG meeting

35. Japan offered to host the next JWG meeting in conjunction with the NC19 meeting, at a date to be determined after consultation among members and both RFMO secretariats. Co-Chair Miyahara suggested a possibility of having a separate NC meeting online after the WCPFC SC meeting to finalize its outcomes next year. The arrangement of the next meeting will be notified well in advance.
36. The JWG recommends extending the terms of the co-chairs Mr. Miyahara and Ms. Lowman by one year.

Agenda Item 9. Other business

37. No other business was raised.

Agenda Item 10. Adoption of Report

38. The IATTC-NC JWG07 adopted the report.

Agenda Item 11. Close of meeting

39. The meeting was brought to a close on 14 July 2022.

Annexes

Annex A – List of participants

Annex B – Agenda

Annex C – Compiled Information on Pacific Bluefin Tuna (Fishing Effort and Catch in the WCPO)

Annex D – Chair’s Summary of 3rd CDS Technical Meeting

Annex E – Candidate Operational Management Objectives and Performance Indicators for Pacific Bluefin Tuna

Annex F – Pacific Bluefin Tuna Interim Harvest Strategy

Annex G – Work Plan for PBF MSE

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE MANAGEMENT
OF PACIFIC BLUEFIN TUNA
SEVENTH SESSION (JWG-07)**

ELECTRONIC MEETING
09:00-13:00, Japan Standard Time
12-14 July 2022

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**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE MANAGEMENT
OF PACIFIC BLUEFIN TUNA
SEVENTH SESSION (JWG-07)**

ELECTRONIC MEETING
09:00-13:00, Japan Standard Time
12-14 July 2022

AGENDA

- 1. Opening of the meeting**
- 2. Adoption of Agenda and Meeting Procedures**
- 3. Scientific Information on Pacific Bluefin Tuna**
 - 3.1 Updates on the stock status of Pacific bluefin tuna
 - 3.2 Reports from WCPFC-Scientific Committee (SC) and IATTC-Scientific Advisory Committee (SAC)
- 4. Reports on the implementation of Pacific bluefin tuna measures**
- 5. Review of Conservation and Management Measures for Pacific Bluefin Tuna**
- 6. Catch Documentation Scheme**
- 7. Further Development of Long-Term Harvest Strategy (post rebuilding)**
 - 7.1 Discussion of possible operational objectives and other elements necessary to further evaluate candidate harvest control rules and reference points
 - 7.2 Consideration of approaches including way to further a MSE process or other options
 - 7.3 Next steps
- 8. Next JWG meeting**
- 9. Other business**
- 10. Adoption of Report**
- 11. Close of meeting**

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**COMPILED INFORMATION ON PACIFIC BLUEFIN TUNA
(FISHING EFFORT AND CATCH IN THE WCPO)**

Table 1. Fishing effort by vessels fishing for Pacific bluefin tuna in the area north of 20° N in the Convention Area

Fishery	Unit of fishing effort ¹	Baseline fishing effort (Para 2, CMM 2021-02)				Fishing effort (Para 8, CMM 2021-02)		
		2002	2003	2004	2002- 2004 Average	2019	2020	2021
Canada								
Not applicable		0	0	0	0	0	0	0
China								
		0	0	0	0	0	0	0
Cook Islands								
Longline		Unknown	Unknown	0		N/A	N/A	N/A
Fiji								
Longline	No. of vessels	0	0	0	0	0	0	0
Japan								
Purse Seine	No. of vessels	69	60	59	63	35	45	51
Longline Dist.&Off.	No. of vessels	654	632	613	633	439	437	413
Longline Coastal	No. of vessels	399	422	386	402	337	311	328
Artisanal fisheries	No. of vessels	Unknown	Unknown	Unknown		18,127	18,138	17,412
Set Net	No. of licenses	1,876	1,956	1,956	1,929	1,784	1,784	1,784
Others	No. of vessels	Unknown	Unknown	Unknown				
Korea								
large-scale purse seiners	No. of vessels	32	29	29	30	23	18	19
Philippines								
Not applicable (N/A)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chinese Taipei								
Longline	No. of vessels	684	659	632	658	491	493	497
U.S.A.								
Not applicable (N/A)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanuatu								
Longline	No. of vessels	0	0	0	0	0	0	0

¹ e.g., sets, fishing days, vessels

Table 2. Catches (mt), including discards, of Pacific bluefin tuna *in the Convention Area* (include all the fisheries in the previous table, plus all other fisheries that catch any Pacific bluefin tuna)

Fishery	All catches (Para 5, CMM 2021-02)								All catches (Para 5, CMM 2021-02)					
	2002		2003		2004		2002-2004 Average		2019		2020		2021	
	<30k g	≥30k g	<30k g	≥30k g	<30k g	≥30k g	<30k g	≥30k g	<30k g	≥30k g	<30k g	≥30k g	<30k g	≥30k g
Canada														
N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
China														
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook Islands														
Longline	0	1.78 9	0	2.94	0	1.35	0	2	N/A ²	N/A	N/A	N/A	N/A	N/A
Fiji														
Longline	0	0	0	0	0	0	0	0	0.19 1	0.36 0	0	0	0	0
Japan³														
Purse Seine	5,17 4	3,73 0	4,99 5	774	3,46 6	4,79 2	4,54 5	3,09 9	1,32 8	3,13 1	783	3,16 5	962	3,23 0
Longline Dist.&Of f.	0	52	0	97	0	240	0	130	56	415	31	585	80	562
Longline Coastal	0	794	0	1,15 2	0	1,61 6	0	1,18 7	112	440	118	755	95	802
Artisanal fisheries	2,60 7	0	2,06 0	0	2,44 5	0	2,37 1	0	677	42	687	73	556	96
Set Net	1,00 8	92	648	191	660	235	772	173	691	260	943	399	1,31 9	423
Others	422	210	205	241	82	432	236	294	178	180	184	288	151	251
<i>Total</i>	<u>9,31</u> <u>0</u>	<u>4,87</u> <u>8</u>	<u>7,95</u> <u>2</u>	<u>2,45</u> <u>5</u>	<u>6,78</u> <u>5</u>	<u>7,31</u> <u>5</u>	<u>8,01</u> <u>6</u>	<u>4,88</u> <u>3</u>	<u>3,04</u> <u>2</u>	<u>4,46</u> <u>7</u>	<u>2,74</u> <u>5</u>	<u>5,26</u> <u>5</u>	<u>3,16</u> <u>4</u>	<u>5,36</u> <u>5</u>

² No fishing effort north of the equator.

³ Catches (mt) in calendar year basis, including discards, of Pacific bluefin tuna *in the Convention Area* (include all the fisheries in the previous table, plus all other fisheries that catch any Pacific bluefin tuna)

(Japan continued)

Catches (mt) in management year⁴ basis, including discards, of Pacific bluefin tuna *in the Convention Area* (include all the fisheries in the previous table, plus all other fisheries that catch any Pacific bluefin tuna)

Fishery		2019		2020		2021	
		<30 kg	≥30 kg	<30 kg	≥30 kg	<30 kg	≥30 kg
Fisheries licensed by the Ministry of Agriculture, Forestry and Fisheries	Purse Seine	1,328	3,131	783	3,165	962	3,230
	Longline Dist.&Off.	56	415	31	585	80	562
Other fisheries	Longline Coastal	112	467	118	785	109	812
	Artisanal fisheries	565	72	687	86	713	141
	Set Net	725	352	1,307	401	1,312	554
	Others	165	173	181	297	179	250
<i>Total</i>		<u>2,950</u>	<u>4,609</u>	<u>3,107</u>	<u>5,320</u>	<u>3,354</u>	<u>5,550</u>
<i>Catch limit</i> ⁵		<u>3,757</u>	<u>5,132</u>	<u>4,238</u>	<u>6,160</u>	<u>4,238</u>	<u>6,162</u>

⁴ **Management year is as follows.**

- 5th management period: January 2019 - December 2019 for Fisheries licensed by the Ministry of Agriculture, Forestry and Fisheries, April 2019 - March 2020 for Other fisheries.
- 6th management period: January 2020 - December 2020 for Fisheries licensed by the Ministry of Agriculture, Forestry and Fisheries, April 2020 - March 2021 for Other fisheries.
- 2021 management period: January 2021 - December 2021 for Fisheries licensed by the Ministry of Agriculture, Forestry and Fisheries, April 2021 - March 2022 for Other fisheries.

⁵ **Catch limit is as follows.**

- 2019 small fish: 4,007 tons - 250 tons (transfer from small fish to large fish) / large fish: 4,882 tons + 250 tons (transfer from small fish to large fish)
- 2020 small fish: 4,007 tons - 450 tons (transfer from small fish to large fish) + 681.1 tons (carry over from the previous management year)
large fish: 4,882 tons + 450 tons (transfer from small fish to large fish) + 527.5 tons (carry over from the previous management year) + 300 tons (transfer from Chinese Taipei)
- 2021 small fish: 4,007 tons - 450 tons (transfer from small fish to large fish) + 681.1 tons (carry over from the previous management year)
large fish: 4,882 tons + 450 tons (transfer from small fish to large fish) + 829.9 tons (carry over from the previous management year)

Fishery	All catches (Para 5, CMM 2021-02)								All catches (Para 5, CMM 2021-02)					
	2002		2003		2004		2002-2004 Average		2019		2020		2021	
	<30kg	≥30kg g	<30kg g	≥30kg g	<30kg g	≥30kg g	<30kg	≥30kg g	<30kg	≥30kg	<30kg g	≥30kg	<30kg g	≥30kg
Korea														
Purse seiner	932		2,601		773		1,435	0	525.0	16.5	154.1	412.7	365.6	56.6
Set net									35.4	0.4	34.5	0.8	83.1	1.1
Others									3.3	0	2.2	0.4	3.1	0.0
Total	932		2,601		773		1,435	<u>0</u>	<u>563.7</u>	<u>16.9</u>	<u>190.8</u>	<u>413.9</u>	451.8	57.7
Philippines														
Artisanal Handline or Hook-and-Line fisheries									0	0	0	2 pcs (~300 kgs + ~220 kgs)	0	2 pcs (~220 kgs + ~270 kgs)
Chinese Taipei														
Longline	0	1,523	0	1,863	0	1,714	0	1700	0	486	0	1,150	0	1,478
Other coastal fisheries	0	4	0	21	0	3	0	9	0	7	0	1	0	1
Total	<u>0</u>	<u>1527</u>	<u>0</u>	<u>1884</u>	<u>0</u>	<u>1717</u>	0	<u>1,709</u>	<u>0</u>	<u>493</u>	<u>0</u>	<u>1,151</u>	<u>0</u>	<u>1,479</u>
U.S.A.⁶														
American Samoa LL	0	3	0	0	1	0	0.3	1	0	0	0	0	0	0
USA LL	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Total	<u>0</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0.3</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
Vanuatu														
Longline ⁷	0	0	0	0	0	0	0	0	0	0	0	0	0	

⁶ Pacific bluefin tuna catches are reported on longline logsheets for the American Samoa fishery, however the species may be misidentified.

⁷ These small catches are bycatch only. Vanuatu does not target PBF at all.

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE MANAGEMENT OF
PACIFIC BLUEFIN TUNA
SEVENTH SESSION (JWG-07)**

ELECTRONIC MEETING
09:00-13:00, Japan Standard Time
12-14 July 2022

CHAIR'S SUMMARY OF 3RD CDS TECHNICAL MEETING

IATTC-NC-CDS03-2022/00

1. Opening of Meeting

1.1 Welcome

1. Mr. Shingo Ota, Chair of the CDS Working Group, opened the meeting and welcomed the participants.

1.2 Selection of rapporteur

2. Mr. Alex Meyer of Japan was appointed the rapporteur for the meeting.

1.3 Adoption of the agenda

3. The provisional agenda was adopted without any change (Appendix 1).

1.4 Meeting arrangements

4. The WCPFC Secretariat explained the meeting arrangements.

2. Development of a Catch Documentation Scheme for Pacific Bluefin Tuna

2.1 Review of the 2nd CDS Technical Meeting and intersessional work

5. The Chair briefly reviewed the results of the 2nd CDS Technical Meeting and related discussions at the 16th Regular Session of the Commission.

6. Japan briefly reviewed work conducted intersessionally after the 2nd CDS Technical Meeting towards developing the draft CMM for the establishment of a CDS.

2.2 Discussion on the draft CMM

7. The meeting participants held discussions on general pending issues based on a paper that was submitted by Japan (IATTC-NC-CDS03-2022/02). The meeting participants concluded the following:

(1) Budgetary and administrative consideration for the development of the electronic Pacific Bluefin Tuna Catch Documentation (ePBCD) system

The participants agreed to establish a small working group that will further review the budgetary and administrative considerations for the development of the ePBCD system and report on the outcomes of its review to the next CDS Technical Meeting. The small working group will be led by Japan and participated in by Chinese Taipei and Canada. Other members interested in participating in the small working group were requested to notify Japan by the end of 15 July 2022.

The small working group will work with the secretariats of the IATTC and the WCPFC, contact the secretariats of the CCSBT and ICCAT to seek more information regarding their bluefin tuna CDSs, and take into consideration the ongoing work to develop a CDS at the IOTC. If the small working group determines that the hiring of a consultant may be required, it will present such a proposal to the next CDS Technical Meeting.

(2) **Scope and functions of the draft CMM for the development of CDS**

The participants agreed that the scope and functions of the draft CMM for the development of CDS would: i) not include seafood traceability and not go beyond the scope of the bluefin tuna CDSs utilized by the CCSBT and ICCAT, and ii) not include specific monitoring, controlling and surveillance measures.

(3) **Next steps**

The participants agreed to further review the budgetary and administrative considerations for the development of the ePBCD system through the aforementioned small working group.

The participants recommended convening two one-day meetings of the CDS Technical Meeting in 2023. The first will be held in January or February 2023 and the timing will be duly notified. The second will be held in conjunction with the 2023 Joint Working Group meeting.

3 Next Meeting

8. The participants recommended convening one one-day meeting in January or February 2023 and one one-day meeting in conjunction with the 2023 Joint Working Group meeting.

4 Other Business

9. No other business was raised.

5 Report to the Joint WG

10. The Chair will provide his Summary of the CDS Technical Meeting to the Joint IATTC-WCPFC NC Working Group.

6 Close of the Meeting

11. The meeting was closed at 10:25 am, Japan Standard Time.

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE MANAGEMENT OF
PACIFIC BLUEFIN TUNA
SEVENTH SESSION (JWG-07)**

ELECTRONIC MEETING
09:00-13:00, Japan Standard Time
12-14 July 2022

**CANDIDATE OPERATIONAL MANAGEMENT OBJECTIVES AND PERFORMANCE
INDICATORS FOR PACIFIC BLUEFIN TUNA**

Note: JWG07 reviewed JWG07-DP-12, produced this Annex, and agreed to revisit this at JWG08.

Category	Operational Management Objective	Performance Indicator
Safety	There should be a less than [5-20%] ⁸ probability of the stock falling below the LRP	<ul style="list-style-type: none"> Probability that $SSB < LRP$ in any given year of the evaluation period (<u>[10-30] years subject to the number of scenarios; NPA use 30 years; can be confirmed in 2023</u>)
Status	To maintain fishing mortality at or below F_{Target} with at least <u>[50-75]</u> % probability	<ul style="list-style-type: none"> Probability that $F < F_{TARGET}$ in any given year of the evaluation period
Stability	To limit changes in overall catch limits between management periods to no more than <u>[15%]</u> downwards[, unless the ISC has assessed that there is a greater than 50% chance the stock is below the LRP]	<ul style="list-style-type: none"> Percent change upwards in catches between management periods excluding periods when $SSB < LRP$ Percent change downwards in catches between management periods excluding periods when $SSB < LRP$
Yield	[Maintain a proportional fishery impact between the WCPO and EPO [similar to the average proportional fishery impact from 1971-1994]]	<ul style="list-style-type: none"> Median fishery impact (in %) on SSB in any given year of the evaluation period by fishery and by WCPO fisheries and EPO fisheries The probability that the proportional EPO fishery impact is at least the 1971-1994 average in any given year
	To maximize yield over the medium (5-10 years) and long (10-30 years) terms, as well as average annual <u>catch</u> <u>yield</u> from the fishery.	<ul style="list-style-type: none"> Expected annual yield over years 5-10 of the evaluation period, by fishery. Expected annual yield over years 10-30 of the evaluation period, by fishery. Expected annual <u>catch</u> <u>yield</u> in any given year of the evaluation period, by fishery.
	<u>[To increase average annual catch in all fisheries across WCPO and EPO]</u>	

⁸ The acceptable levels of risk may vary depending on the LRP selected, but should be no greater than 20%.

JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE MANAGEMENT OF
PACIFIC BLUEFIN TUNA
SEVENTH SESSION (JWG-07)

ELECTRONIC MEETING
09:00-13:00, Japan Standard Time
12-14 July 2022

PACIFIC BLUEFIN TUNA INTERIM HARVEST STRATEGY

Note: JWG07 reviewed JWG07-DP-13, produced this Annex, and agreed to revisit this at JWG08.

The following harvest control rules shall be applied based on the results of stock assessments and SSB projections to be conducted by the ISC during the period from the year in which the stock is projected to achieve the second rebuilding target of 20%SSB0 to 2029 or the year ~~when~~ a long-term harvest strategy based on an MSE process is implemented.

- a. If the SSB projection indicates that SSB will be below 20%SSB0 with a probability of 60%, management measures shall be modified to increase the SSB to at least 20%SSB0 with 60% probability. For this purpose, the ISC ~~will be~~ is requested, ~~if necessary,~~ to provide information on possible management measures to achieve 60% that the stock is above 20%SSB0 after 10 years of the latest stock assessment.
- b. If the SSB projection indicates that SSB will be greater than 20%SSB0 with a probability of 60%, modifications to management measures may be considered so long as any changes maintain SSB greater than 20%SSB0 with a probability of 60%.

[Maintain a and replace b with:

If the SSB projection indicates that SSB will be greater than 20%SSB0 with a probability of 60%, management measures shall be modified to the extent that the stock is maintained above 20%SSB0 with a probability of 60%. For this purpose, the ISC is requested to provide information on possible management measures to achieve 60% that the stock is maintained above 20%SSB0.]

[Replace both a and b with:

Management measures shall be taken to ensure the stock is maintained at or above 20%SSB0 in 2029 with a probability of 60%, before 2029 or the year when harvest strategy based on MSE process is initiated whichever earlier. For this purpose, the ISC is requested to provide information on possible management measures to achieve 60% that the stock is maintained at or above 20%SSB0 in 2029.]

- c. Any adjustments to management measures shall be considered in cooperation between the two RFMOs taking into account historical and future projected proportional fishery impacts on SSB between fisheries in the EPO and fisheries in the WCPO. For this purpose, ISC is requested, to provide relevant information, including projected proportional fishery impact of potential management measures changes.
- d. This harvest control rule will be reviewed and modified, as necessary, if depletion estimates across the time-series have been adjusted due to changes in assumptions and/or settings of the stock assessment model.

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MANAGEMENT OF PACIFIC BLUEFIN TUNA
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09:00-13:00, Japan Standard Time
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**WORK PLAN FOR DEVELOPMENT OF A LONG-TERM HARVEST STRATEGY
FOR PBF (INCLUDING MSE)**

The following is a proposed work plan for developing a long-term Harvest Strategy (including MSE) for Pacific bluefin tuna:

2022 (JWG7):

- JWG recommends that the ISC develop a technical work plan for the MSE process before JWG8 in 2023. This could include development of a set of MSE operating models differing in their structural uncertainty.
- JWG requests the ISC to provide feedback on the proposed objectives and indicators as discussed at JWG7.
- The JWG requests its members to solicit input from its stakeholders and task itself to address this at JWG8, as appropriate.

2023 (JWG8):

- JWG recommends a set of operational management objectives and performance indicators for use in an MSE process and considers refining candidate HCRs and RPs.
- ISC to provide an overview of their technical workplan and any progress on the MSE, including but not limited to clarifications needed, to JWG8 in 2023.
- If additional information is requested by the ISC from the JWG relevant to the MSE, the JWG should task its members to solicit input from its stakeholders and task itself to address this at JWG9 in 2024, as appropriate.
- JWG recommends an Interim Harvest Strategy to be applied during the period from the year in which the stock is projected to achieve the second rebuilding target of 20%SSB0 to when a long-term harvest strategy based on MSE process is implemented.

2024 (JWG9):

- ISC to complete a benchmark assessment for PBF and JWG may expect an update on progress of MSE.
- If additional information is requested by the ISC from the JWG relevant to the MSE, the JWG should task its members to solicit input from its stakeholders and task itself to address this at JWG10 in 2025, as appropriate.
- JWG recommends new management measures based on Interim Harvest Strategy.

2025 (JWG10):

- ISC presents results from the MSE to JWG10 in 2025
- JWG recommends a final HS to the WCPFC and IATTC for adoption.

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

**NORTHERN COMMITTEE
EIGHTEENTH REGULAR SESSION**

ELECTRONIC MEETING
4 – 6 October 2022

**WORKING PROPOSAL FOR AMENDMENTS TO CONSERVATION AND MANAGEMENT
MEASURE FOR PACIFIC BLUEFIN TUNA (CMM 2021-02)**

Conservation and Management Measure 2021-02XX

The Western and Central Pacific Fisheries Commission (WCPFC):

Recognizing that WCPFC6 adopted Conservation and Management Measure for Pacific bluefin tuna (CMM 2009-07) and the measure was revised ten times since then (CMM 2010-04, CMM 2012-06, CMM 2013-09, CMM 2014-04, CMM 2015-04, CMM 2016-04, CMM 2017-08, CMM 2018-02, CMM 2019-02 and CMM 2020-02) based on the conservation advice from the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) on this stock;

Noting the latest stock assessment provided by ISC Plenary Meeting in July 2020, indicating the following:

- (1) spawning stock biomass (SSB) fluctuated throughout the assessment period (fishing years 1952-2018), (2) the SSB steadily declined from 1996 to 2010, (3) the slow increase in the stock biomass has been continuing since 2011, (4) total biomass in 2018 exceeded the historical median with an increase in immature fish; and (5) fishing mortality (F%SPR) declined from a level producing about 1% of SPR in 2004-2009 to a level producing 14% of SPR in 2016-2018;
- A substantial decrease in estimated F has been observed in ages 0-2 in 2016-2018 relative to the previous years;
- Since the early 1990s, the WCPO purse seine fisheries, in particular those targeting small fish (age 0-1) have had an increasing impact on the spawning stock biomass, and in 2016 had a greater impact than any other fishery group;
- Harvesting small fish has a greater impact on future spawning stock biomass than harvesting large fish of the same amount;
- The projection results indicate that, under all the examined scenarios, the initial goal of rebuilding the stock to SSBMED by 2024 with at least 60% probability, is reached with 99% or 100% probability, and that the risk of SSB falling below SSBloss is negligible; and
- The projection results also indicate that, under all the examined scenarios, the estimated probability of achieving the second biomass rebuilding target (20% of SSBF=0) 10 years after the achievement of the initial rebuilding target or by 2034, whichever is earlier, is greater than 90%.

Recalling that paragraph (4) of the Article 22 of the WCPFC Convention, which requires cooperation between the Commission and the IATTC to reach agreement to harmonize CMMs for fish stocks such as Pacific bluefin tuna that occur in the convention areas of both organizations;

[Mindful of the Article 4 of the WCPFC Convention that nothing in the Convention shall prejudice the rights, jurisdiction and duties of States under the 1982 Convention and the Agreement;](#)

[Also Mindful of paragraph 1 of the Article 7 of the Agreement that coastal States and other States shall](#)

[cooperate for the conservation and optimum utilization of highly migratory fish stocks without prejudice to the sovereign rights of coastal States for the purpose of exploring and exploiting, conserving and managing the living marine resources within areas under national jurisdiction;](#)

Adopts, in accordance with Article 10 of the WCPFC Convention that:

General Provision

1. This conservation and management measure has been prepared to implement the Harvest Strategy for Pacific Bluefin Tuna Fisheries (Harvest Strategy 2017-02), and the Northern Committee shall periodically review and recommend revisions to this measure as needed to implement the Harvest Strategy.

Management measures

2. CCMs shall take measures necessary to ensure that total fishing effort by their vessel fishing for Pacific bluefin tuna in the area north of the 20° N shall stay below the 2002–2004 annual average levels.

3. Japan, Korea and Chinese Taipei shall, respectively, take measures necessary to ensure that its catches of Pacific bluefin tuna less than 30 kg and Pacific bluefin tuna 30 kg or larger shall not exceed the annual catch limits in the tables below. The basis for the limits is as follows; annual catch limits for Pacific bluefin tuna less than 30 kg are 50% of the 2002-2004 average annual levels and annual catch limits for Pacific bluefin tuna 30 kg or larger are 115% of the 2002-2004 average annual levels or 30 metric tons for a CCM who does not have an initial catch limit for Pacific bluefin tuna 30 kg or larger before 2022.

Pacific Bluefin tuna less than 30kg

	2002-2004 average annual level	Annual initial catch limit
Japan	8,015 metric tons	4,007 metric tons
Korea	1,435 metric tons	718 metric tons

Pacific Bluefin tuna 30kg or larger

	2002-2004 average annual level	Annual initial catch limit
Japan	4,882 metric tons	5,614 metric tons
Korea	0 metric tons	30 metric tons
Chinese Taipei	1,709 metric tons	1,965 metric tons

4. CCMs, not described in paragraph 3, may increase their catch of Pacific bluefin tuna 30kg or larger by 15% above their 2002-2004 annual average levels. CCMs with a base line catch of 10 tons or less of Pacific bluefin tuna 30 kg or larger may increase their catch as long as it does not exceed 10 metric tons per year.

[5. Notwithstanding paragraphs 3 and 4, as an interim measure for 2023 and 2024, in the event that the total amount of Pacific bluefin tuna catch in the set net fishery in a given year is unexpectedly and unusually large in its territorial waters, the Republic of Korea may choose to apply the alternative Pacific bluefin tuna fishery Management Plan set out in the Attachment 2. For the purpose of this paragraph, 150 tons of accumulated catch in the set net fishery shall be the threshold for the unexpectedly and unusually large amount of catch.](#)

~~5.6.~~ Any overage or underage of the catch limit shall be deducted from or may be added to the catch limit for the following year. The maximum underage that a CCM may carry over in any given year shall not exceed 5% of its annual initial catch limit⁹.

~~6.7.~~ CCMs described in paragraph 3 may use part of the catch limit for Pacific bluefin tuna smaller than 30 kg stipulated in paragraph 3 above to catch Pacific bluefin tuna 30 kg or larger in the same year. In this case, the amount of catch 30 kg or larger shall be counted against the catch limit for Pacific bluefin tuna smaller than 30 kg¹⁰. CCMs shall not use the catch limit for Pacific bluefin tuna 30 kg or larger to catch Pacific bluefin tuna smaller than 30 kg.

~~7.8.~~ All CCMs except Japan shall implement the limits in paragraph 3 on a calendar-year basis. Japan shall implement the limits using a management year other than the calendar year for some of its fisheries and have its implementation assessed with respect to its management year. To facilitate the assessment, Japan shall:

- a. Use the following management years:
 - 1) For its fisheries licensed by the Ministry of Agriculture, Forestry and Fisheries, use the calendar year as the management year.
 - 2) For its other fisheries, use 1 April – 31 March as the management year¹¹.
- b. In its annual reports for PBF, for each category described in a.1 and a.2 above, complete the required reporting template for both the management year and calendar year clearly identifying fisheries for each management year.

~~8.9.~~ CCMs shall report to the Executive Director by 31 July each year their fishing effort and <30 kg and ≥30 kg catch levels, by fishery, for the previous 3 year, accounting for all catches, including discards. CCMs shall report their annual catch limits and their annual catches of PBF, with adequate computation details, to present their implementation for paragraph 5 and 6, if the measures and arrangements in the said paragraphs and relevant footnotes applied. The Executive Director will compile this information each year into an appropriate format for the use of the Northern Committee.

~~9.10.~~ CCMs shall intensify cooperation for effective implementation of this CMM, including juvenile catch reduction.

~~10.11.~~ CCMs, in particular those catching juvenile Pacific bluefin tuna, shall take measures to monitor and obtain prompt results of recruitment of juveniles each year.

⁹ Notwithstanding paragraph 5, a CCM may carry over up to 17% of its initial catch limits in 2021, 2022 and 2023, which remain uncaught, to 2022, 2023 and 2024, respectively.

¹⁰ In 2022, 2023 and 2024, a CCM may count the amount of catch 30 kg or larger adjusted with the conversion factor 0.68 (catch 30 kg or larger multiplied by 0.68) against the catch limit for Pacific bluefin tuna smaller than 30 kg up to 10% of its initial catch limit for Pacific bluefin tuna smaller than 30 kg. Notwithstanding the first sentence of this footnote, a CCM who does not have an initial catch limit for Pacific bluefin tuna 30kg or larger before 2022 may apply the conversion factor 0.68 up to 25% instead of 10% of its initial catch limit for Pacific bluefin tuna less than 30kg for the same period.

¹¹ For the category described a.2 of paragraph 7, the TCC shall assess in year 20XX its implementation during the management year that starts 1 April 20XX-1 (e.g., in the 2020 compliance review, the TCC will assess Japan's implementation for its fisheries licensed by the Ministry of Agriculture, Forestry and Fisheries during calendar-year 2019 and for its other fisheries during 1 April 2019 through 31 March 2020).

~~11~~12. Consistent with their rights and obligations under international law, and in accordance with domestic laws and regulations, CCMs shall, to the extent possible, take measures necessary to prevent commercial transaction of Pacific bluefin tuna and its products that undermine the effectiveness of this CMM, especially measures prescribed in the paragraph 3 above. CCMs shall cooperate for this purpose.

~~12~~13. CCMs shall cooperate to establish a catch documentation scheme (CDS) to be applied to Pacific bluefin tuna in accordance with the Attachment 1 of this CMM.

~~13~~14. CCMs shall also take measures necessary to strengthen monitoring and data collecting system for Pacific bluefin tuna fisheries and farming in order to improve the data quality and timeliness of all the data reporting.

~~14~~15. CCMs shall report to Executive Director by 31 July annually measures they used to implement paragraphs 2, 3, 4, 7, 8, 10, 11 13 and 16 of this CMM. CCMs shall also monitor the international trade of the products derived from Pacific bluefin tuna and report the results to Executive Director by 31 July annually. The Northern Committee shall annually review those reports CCMs submit pursuant to this paragraph and if necessary, advise a CCM to take an action for enhancing its compliance with this CMM.

~~15~~16. The WCPFC Executive Director shall communicate this CMM to the IATTC Secretariat and its contracting parties whose fishing vessels engage in fishing for Pacific bluefin tuna in EPO and request them to take equivalent measures in conformity with this CMM.

~~16~~17. To enhance effectiveness of this measure, CCMs are encouraged to communicate with and, if appropriate, work with the concerned IATTC contracting parties bilaterally.

~~17~~18. The provisions of paragraphs 2 and 3 shall not prejudice the legitimate rights and obligations under international law of those small island developing State Members and participating territories in the Convention Area whose current fishing activity for Pacific bluefin tuna is limited, but that have a real interest in fishing for the species, that may wish to develop their own fisheries for Pacific bluefin tuna in the future.

~~18~~19. The provisions of paragraph 17 shall not provide a basis for an increase in fishing effort by fishing vessels owned or operated by interests outside such developing coastal State, particularly Small Island Developing State Members or participating territories, unless such fishing is conducted in support of efforts by such Members and territories to develop their own domestic fisheries.

~~19~~20. This CMM replaces CMM 2021-02. On the basis of stock assessment conducted by ISC in 2022, and other pertinent information, this CMM shall be reviewed and may be amended as appropriate in 2023.

Development of a Catch Document Scheme for Pacific Bluefin Tuna

Background

At the 1st joint working group meeting between NC and IATTC, held in Fukuoka, Japan from August 29 to September 1, 2016, participants supported to advance the work on the Catch Documentation Scheme (CDS) in the next joint working group meeting, in line with the development of overarching CDS framework by WCPFC and taking into account of the existing CDS by other RFMOs.

1. Objective of the Catch Document Scheme

The objective of CDS is to combat IUU fishing for Pacific Bluefin Tuna (PBF) by providing a means of preventing PBF and its products identified as caught by or originating from IUU fishing activities from moving through the commodity chain and ultimately entering markets.

2. Use of electronic scheme

Whether CDS will be a paper based scheme, an electronic scheme or a gradual transition from a paper based one to an electronic one should be first decided since the requirement of each scheme would be quite different.

3. Basic elements to be included in the draft conservation and management measure (CMM)

It is considered that at least the following elements should be considered in drafting CMM.

- (1) Objective
- (2) General provision
- (3) Definition of terms
- (4) Validation authorities and validating process of catch documents and re-export certificates
- (5) Verification authorities and verifying process for import and re-import
- (6) How to handle PBF caught by artisanal fisheries
- (7) How to handle PBF caught by recreational or sport fisheries
- (8) Use of tagging as a condition for exemption of validation
- (9) Communication between exporting members and importing members
- (10) Communication between members and the Secretariat
- (11) Role of the Secretariat
- (12) Relationship with non-members
- (13) Relationship with other CDSs and similar programs
- (14) Consideration to developing members
- (15) Schedule for introduction
- (16) Attachment
 - (i) Catch document forms

- (ii) Re-export certificate forms
- (iii) Instruction sheets for how to fill out forms
- (iv) List of data to be extracted and compiled by the Secretariat

4. Work plan

The following schedule may need to be modified, depending on the progress on the WCPFC CDS for tropical tunas.

- 2017 The joint working group will submit this concept paper to the NC and IATTC for endorsement. NC will send the WCPFC annual meeting the recommendation to endorse the paper.
- 2018 The joint working group will hold a technical meeting, preferably around its meeting, to materialize the concept paper into a draft CMM. The joint working group will report the progress to the WCPFC via NC and the IATTC, respectively.
- 2019 The joint working group will hold a second technical meeting to improve the draft CMM. The joint working group will report the progress to the WCPFC via NC and the IATTC, respectively.
- 20XX The joint working group will hold a third technical meeting to finalize the draft CMM. Once it is finalized, the joint working group will submit it to the NC and the IATTC for adoption. The NC will send the WCPFC the recommendation to adopt it.

Republic of Korea's Alternative Management Plan for Pacific bluefin tuna

1. The Republic of Korea should manage Pacific Bluefin tuna catch in its set net fisheries within its national catch limit by taking necessary measures including reservation of certain amount of quota for unexpected circumstances and adjustment of the initial quota allocations to respective fisheries to the extent possible. If a large amount of Pacific bluefin tuna catch in set net fisheries takes place unexpectedly and cannot be accommodated within Korea's national catch limit despite such management effort, the Pacific bluefin tuna catch in set net fishery may be retained and landed for domestic consumption or sale at the designated market even if such catch takes place beyond Korea's national catch limit. The maximum amount of Pacific Bluefin tuna bycaught in set net fishery allowed for domestic consumption or sale beyond national catch limit should be limited to 300 metric tons. In that case, a pay-back should not be required provided that Korea ensures that its set net fishing effort in terms of the number of licenses and the amount of initial quota allocations to fisheries other than set net fishery for the very next year do not exceed the existing level.

2. For any Pacific bluefin tuna catch taken beyond the national catch limit in accordance with paragraph 1 above, the Republic of Korea should submit a catch report to the Secretariat on a monthly basis for CCMs information.

3. The Republic of Korea should make its best effort to collect fishery data including catch and discard information in its set net fisheries to the extent possible. Such effort should include deployment of electronic means of monitoring at the fishing ground, in addition to reporting by fishermen and data collection at the designated market. The fishery data of set net fishery should be submitted to the Secretariat in accordance with the scientific data submission requirements. The Republic of Korea should also include detailed information on its set net fishery in its national reports to the Northern Committee and/or IATTC/WCPFC Joint Working Group as well as in its annual Part I and II report in a transparent manner.

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

NORTHERN COMMITTEE
EIGHTEENTH REGULAR SESSION

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HARVEST STRATEGY FOR NORTH PACIFIC ALBACORE FISHERY

Harvest Strategy 2022-XX

Introduction and scope

This Harvest Strategy, applicable to all fisheries that harvest North Pacific albacore, was developed based on the results of the Management Strategy Evaluation (MSE) completed by the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC) in 2021.

1. Management objectives

Considering the overarching objective of ensuring the sustainability of North Pacific albacore tuna and current fisheries supported by the stock in the Western and Central Pacific Ocean, the following management objectives are established:

- (a) Maintain Spawning Stock Biomass (SSB) above the Limit Reference Point (LRP), with a probability of at least 80% over the next 10 years.
- (b) Maintain depletion of total biomass around historical (2006-2015) average depletion over the next 10 years.
- (c) Maintain fishing intensity (F) at or below the target reference point with a probability of at least 50% over the next 10 years.
- (d) To the extent practicable, management changes (e.g., catch and/or effort) should be relatively gradual between years.

2. Reference points

For the purpose of the North Pacific albacore tuna harvest strategy, the following reference points are established.:

- (a) Target reference point (TRP) = $F_{45\%}$, which is the fishing intensity (F) level that results in the stock producing 45% of spawning potential ratio (SPR)
- (b) Threshold reference point ($SSB_{\text{threshold}} = 30\% SSB_{\text{current}, F=0}$), which is 30% of the dynamic unfished spawning stock biomass
- (c) Limit reference point (LRP) = $14\% SSB_{\text{current}, F=0}$, which is 14% of the dynamic unfished spawning stock biomass.

3. Acceptable levels of risk

The risk of breaching the Limit Reference Point based on the most current estimate of SSB shall be no greater than 20%.

4. Monitoring strategy

The ISC will conduct a stock assessment every three years, at which time the status relative to the reference points established under paragraph 2 will be evaluated.

When performing a stock assessment, the ISC will consider if the biology, environmental conditions, data sources, status of the stock, and/or other underlying assumptions have changed substantially enough to warrant revisiting the components in this harvest strategy.

5. Harvest Control Rules (HCR)

- (a) By 2023, the Commission shall adopt harvest control rules as part of the harvest strategy for North Pacific albacore, consistent with Figure 1.
- (b) The harvest control rules adopted pursuant to paragraph 5(a) shall outline inter alia the actions the Commission will take to manage North Pacific albacore tuna.
- (c) The actions referenced under paragraph 5(b) shall be determined by the position of the most recent fishing intensity and biomass estimates relative to the reference points established pursuant to this CMM.

Other Provisions

The Commission shall promote compatibility between the harvest strategy adopted herein and the harvest strategy adopted by the Inter-American Tropical Tuna Commission with respect to North Pacific albacore tuna.

The ISC is requested to develop criteria for identification of exceptional circumstances in 2023.

This Harvest Strategy replaces the “Interim Harvest Strategy for North Pacific Albacore Fishery” adopted as Harvest Strategy 2017-01.

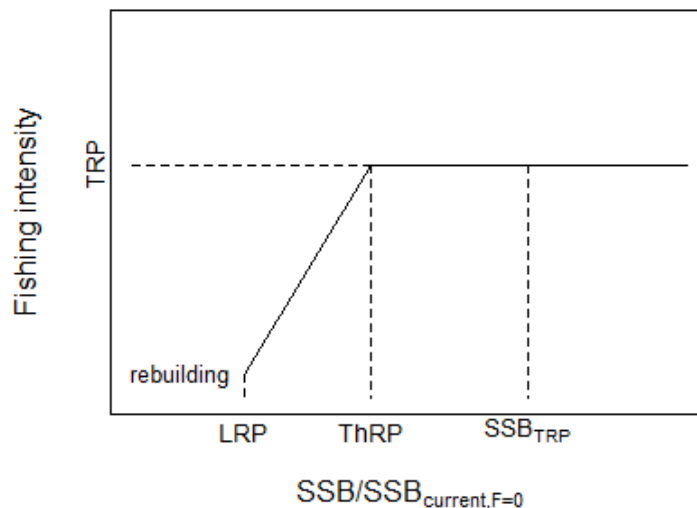


Figure 1. Illustration of the harvest control rules with target reference point (TRP), threshold reference point (ThRP), limit reference point (LRP), and the expected SSB when fishing at the TRP (SSB_{TRP}). The harvest control rules to be adopted pursuant to paragraph 5(a) are intended to include the triggering of a rebuilding plan if the $SSB/SSB_{current,F=0}$ falls below the LRP.

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**DRAFT CONSERVATION AND MANAGEMENT MEASURE
FOR NORTH PACIFIC SWORDFISH**

Conservation and Management Measure 2022-XX

The Western and Central Pacific Fisheries Commission (WCPFC),

Noting that Harvest Strategy for North Pacific Swordfish Fisheries was adopted at WCPFC16, which established the Limit Reference Point for the exploitation rate (F-limit) of F_{MSY} ;

Observing that the best scientific evidence on Western and Central North Pacific Swordfish from the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) indicates that the species is not likely overfished and is not likely experiencing overfishing relative to MSY-based or 20% of unfished spawning biomass-based reference points;

Also observing that the best scientific evidence on Eastern Pacific Swordfish from the ISC indicates that the species is not likely overfished but is likely experiencing overfishing some of the recent years relative to MSY-based reference points, and there is an uncertainty in stock boundary between Western Central North Pacific stock and Eastern Pacific stock that are being reviewed by the ISC toward the stock assessment scheduled in 2023;

Noting that draft Conservation and Management Measures for South Pacific Swordfish to strengthen the existing measure has been under consideration at the Commission, given that its fishing mortality has been at high levels in the last decades; and

Recalling Article 5(c) of the WCPFC Convention that requires application of the precautionary approach for the conservation and management of highly migratory fish stocks in the WCPF Convention Area;

Adopts, in accordance with the Article 10 of the WCPFC Convention that:

1. This measure shall apply in the high seas and EEZs within the Convention Area north of 20° N (hereinafter referred to as “the Area”).
2. The Members, Cooperating Non-Members and participating territories (hereinafter referred to as CCMs) shall take necessary measures to ensure that the level of fishing effort of their fisheries taking North Pacific swordfish in the Area is not increased beyond 2008-2010 average annual levels¹²¹³;

¹² For the US swordfish longline fishery, the level of fishing effort shall not be increased beyond the maximum number of limited entry permits available during 2008-2010.

¹³ For the Chinese Taipei’s coastal artisanal longline fishery, the level of fishing effort shall not be increased beyond the number of vessels licensed during 2008-2010.

3. Paragraphs 2 and 4 shall not be applied to those fisheries taking less than 200 metric tons of North Pacific swordfish in the Area per year. However, if the catches of such fisheries exceed 200 metric tons in any given year, the Commission shall adopt appropriate management measure for such fisheries.

4. All CCMs shall report annually to the WCPFC Commission all catches of North Pacific swordfish in the Area and all fishing effort in those fisheries subject to the measures in paragraph 2, by gear type using the template provided in Annex 1.

5. The provisions of paragraph 2 shall not prejudice the legitimate rights and obligations under international law of those small island developing State Members and participating territories in the Convention Area whose current fishing activity for North Pacific swordfish is limited, but that have a real interest in, and history of, fishing for the species, that may wish to develop their own fisheries for North Pacific swordfish in the future.

6. The provisions of paragraph 5 shall not provide a basis for an increase in fishing effort by fishing vessels owned or operated by interests outside such small island developing State Members or participating territories, unless such fishing is conducted in support of efforts by such Members and territories to develop their own domestic fisheries.

Annex I: Average annual fishing effort for 2008-2010 and annual fishing effort for subsequent years for fisheries taking North Pacific swordfish

CC M	Area ¹⁴	Fishery (gear type)	2008-2010			Year			Year			Year		
			Average			Cat ch (t)	No. of vess els	Fishi ng days	Cat ch (t)	No. of vess els	Fishi ng days	Cat ch (t)	No. of vess els	Fishi ng days
			Cat ch (t)	No. of vess els	Fishi ng days ¹⁵									

¹⁴ If collective effort limits across the North Pacific Ocean, report the Area and North Pacific Ocean separately

¹⁵ Fishing days shall be the total days of fishing (both targeting and bycatch). CCMs can consider the plural effort metrics in Annex 1 to this CMM in their entirety and in the case of fisheries that take NPS as bycatch, the metric of “fishing days” may not be appropriate for assessing the compliance with the effort control provision.

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WORK PROGRAMME FOR THE NORTHERN COMMITTEE

Work areas	Objectives	annual tasks		
	2023–2025	2023	2024	2025
1. Northern stocks				
a. Monitor status; consider management action	Review status and take action as needed for:			
	<p><u>North Pacific albacore</u> Tasks</p> <p>(A) Review members' reports on their implementation of CMM 2019-03.</p> <p>(B) Implement the Harvest Strategy, including:</p> <p>(1) monitor if LRP is breached;</p> <p>(2) continue to work to establish reference points and other elements of harvest strategies, if appropriate based on MSE;</p> <p>(3) recommend any changes</p>	<p>Review the compiled members' reports and identify and rectify shortcomings.</p> <p>Further development of harvest strategy including establishment of harvest control rules, which may include formulas for setting fishing intensity based on agreed reference points, and consider exceptional circumstances as appropriate to complete Task (B)(2).</p> <p>Obtain the new assessment</p>	<p>Review the compiled members' reports and identify and rectify shortcomings.</p> <p>Continue to further development of harvest strategy to complete Task (B)(2).</p>	<p>Review the compiled members' reports and identify and rectify shortcomings.</p> <p>Continue to further development of harvest strategy to complete Task (B)(2).</p>

	to CMM.	results from ISC and recommend any necessary changes to CMM. (Task (B) (3))		
	<p><u>Pacific bluefin tuna</u> Tasks</p> <p>(A) Review members’ reports on their implementation of CMM on Pacific bluefin tuna.</p> <p>(B) Implement the Harvest Strategy including:</p> <ol style="list-style-type: none"> (1) monitor probability of second rebuilding target being achieved on schedule; (2) continue to work to establish LRP, TRP and other elements of harvest strategy; (3) recommend any changes to CMM; (4) support MSE development, including stakeholder workshops, considering recommendations of the NC-IATTC Joint Working Group on the Management of Pacific Bluefin Tuna (JWG). 	<p>Review the compiled members’ reports and identify and rectify shortcomings.</p> <p>Based on relevant work results from ISC and other pertinent information, recommend any necessary changes to CMM on Pacific bluefin tuna.</p> <p>Work in the JWG to further develop harvest strategy.</p> <p>JWG to recommend a set of operational management objectives and performance indicators for use in an MSE process and consider refining candidate HCRs and RPs.</p> <p>Obtain an overview of the ISC’s technical workplan and any progress on the MSE, including but not limited to clarifications needed and consider at JWG8.</p> <p>If additional information is requested by the ISC from the JWG relevant to the MSE, JWG to solicit input from its</p>	<p>Review the compiled members’ reports and identify and rectify shortcomings.</p> <p>Review the 2024 stock assessment results and recommend any necessary changes to CMM. (Task (B) (3)).</p> <p>Work in the JWG to further develop harvest strategy.</p> <p>Obtain completed benchmark assessment for PBF and, if possible an update on progress of MSE from ISC.</p> <p>If additional information is requested by the ISC from the JWG relevant to the MSE, JWG to solicit input from its stakeholders and task itself to address this at JWG10 in 2025, as appropriate.</p>	<p>Review the compiled members’ reports and identify and rectify shortcomings.</p> <p>Review the 2024 stock assessment results and recommend any necessary changes to CMM. (Task (B) (3)).</p> <p>Work in the JWG to further develop harvest strategy.</p> <p>Obtain results from the MSE from ISC at JWG10 in 2025</p> <p>JWG to recommend a final HS to the WCPFC and IATTC for adoption.</p>

	(C) Develop CDS	<p>stakeholders and task itself to address this at JWG9 in 2024, as appropriate.</p> <p>JWG to recommend an Interim Harvest Strategy to be applied during the period from the year in which the stock is projected to achieve the second rebuilding target of 20%SSB₀ to when a long-term harvest strategy based on MSE process is implemented.</p> <p>Develop CDS based on the inputs from members and recommendations of the JWG, and further develop a draft CMM if needed.</p>	<p>JWG to recommend new management measures based on Interim Harvest Strategy.</p> <p>Complete development of CDS.</p>	
	<p><u>Swordfish</u> Further develop the harvest strategy consistent with CMM 2014-06, including consideration of a target reference point and associated harvest control rule.</p>	<p>Consider the new assessment results from ISC and consider appropriate amendment to the CMM.</p> <p>Consider responses from the ISC to NC requests.</p> <p>Consider and recommend appropriate TRP and associated HCR.</p>		
b. Data	Achieve timely submission of complete data needed for assessments, formulation of measures, and review of Commission decisions.	<p>CCMs participating in the NC submit complete data on fisheries for northern stocks to the Commission.</p> <p>Encourage submission to Commission of Pacific bluefin</p>	<p>CCMs participating in the NC submit complete data on fisheries for northern stocks to the Commission.</p> <p>Encourage submission to Commission of Pacific</p>	<p>CCMs participating in the NC submit complete data on fisheries for northern stocks to the Commission.</p> <p>Encourage submission to Commission of Pacific</p>

	Consider systems to validate catch data	tuna, North Pacific albacore, North Pacific striped marlin and swordfish data from all CCMs and make available to ISC.	bluefin tuna, North Pacific albacore, North Pacific striped marlin and swordfish data from all CCMs and make available to ISC.	bluefin tuna, North Pacific albacore, North Pacific striped marlin and swordfish data from all CCMs and make available to ISC.
c. Scientific support	Provide support for scientific studies.			
2. Non-northern stocks				
	<u>Striped marlin</u>	Review information from ISC that may inform management advice for the rebuilding plan	Review information from ISC that may inform management advice for the rebuilding plan	Review information from ISC that may inform management advice for the rebuilding plan
	<u>Blue shark</u>	Review information from ISC that may inform management advice	Review information from ISC that may inform management advice	Review information from ISC that may inform management advice
3. Non-target, associated, dependent species				
a. Seabirds	Evaluate effectiveness of current measures to minimize catch and mortality, and improve them as needed.	Review implementation of CMM 2018-03 in the northern area.	Review implementation of CMM 2018-03 in the northern area.	Review implementation of CMM 2018-03 in the northern area.
b. Sea turtles	Consider appropriate implementation of methods to minimize catch and mortality.	Review mitigation research results and consider management action.	Review mitigation research results and consider management action.	Review mitigation research results and consider management action.
c. Sharks	Consider appropriate implementation for CMM 2019-04 in the northern area.	Review scientific advice from ISC, if any, and consider management options as necessary.	Review scientific advice from ISC, if any, and consider management options as necessary.	Review scientific advice from ISC, if any, and consider management options as necessary.

		Encourage submission of all shark data to ISC.	Encourage submission of all shark data to ISC.	Encourage submission of all shark data to ISC.
4. Review effectiveness of decisions	Annually review effectiveness of conservation and management measures and resolutions applicable to fisheries for northern stocks.	Review effectiveness of North Pacific albacore measure (CMM 2019-03), including members' reports on their interpretation and implementation of fishing effort control. Review effectiveness of Pacific bluefin tuna measure.	Review effectiveness of North Pacific albacore measure (CMM 2019-03), including members' reports on their interpretation and implementation of fishing effort control. Review effectiveness of Pacific bluefin tuna measure.	Review effectiveness of North Pacific albacore measure (CMM 2019-03), including members' reports on their interpretation and implementation of fishing effort control. Review effectiveness of Pacific bluefin tuna measure.
5. ROP (Paragraph 9, Attachment C of CMM 2018-05)		Review implementation of ROP for fishing vessels operating in north of 20°N.	Review implementation of ROP for fishing vessels operating in north of 20°N.	Review implementation of ROP for fishing vessels operating in north of 20°N.
6. Cooperation with other organizations				
a. ISC		Consider action to support ISC.	Consider action to support ISC.	Consider action to support ISC.
b. IATTC	Following Article 22.4, consult to facilitate consistent management measures throughout the respective ranges of the northern stocks.	Have consultation to maintain consistent measures for North Pacific albacore and Pacific bluefin tuna. Hold a joint working group meeting on Pacific bluefin tuna management.	Have consultation to maintain consistent measures for North Pacific albacore and Pacific bluefin tuna. Hold a joint working group meeting on Pacific bluefin tuna management.	Have consultation to maintain consistent measures for North Pacific albacore and Pacific bluefin tuna. Hold a joint working group meeting on Pacific bluefin tuna management.