



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

**Northern Committee
Seventeenth Regular Session**

**Electronic Meeting
5-7 October 2021**

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 Seventeenth 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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SUMMARY REPORT

AGENDA ITEM 1 — OPENING OF MEETING

1. The Seventeenth Regular Session of the Northern Committee (NC17) took place electronically, on 5-7 October 2021. The meeting was attended by Northern Committee (NC) members from Canada, China, Cook Islands, Fiji, Japan, Republic of Korea, Philippines, Chinese Taipei, United States of America (USA) and Vanuatu and observers from International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), Organization for Regional and Inter-Regional Studies (ORIS), Pacific Islands Forum Fisheries Agency (FFA), 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. T. Jones (WCPFC) explained the virtual meeting arrangements and updates to the meeting website.

1.4 Report from ISC and SC

1.4.1 Report from ISC

5. J. Holmes, ISC Chair, provided the following summary of the outcomes of the 21st Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC21).

The 21st ISC Plenary was held as a virtual meeting on July 12-15 and 19, 2021.

The Plenary reviewed results, conclusions, new data, and updated analyses of the billfish, albacore, shark, and Pacific bluefin tuna (PBF) working groups. The Plenary endorsed the Pacific blue marlin stock assessment and considers it to be the best available scientific information on this stock. Although reference points have not been established for the Pacific blue marlin stock, the stock is likely (>81%) not overfished and overfishing is very likely (>90%) not occurring relative MSY-based reference points.

An indicator analysis was conducted for North Pacific shortfin mako shark based on trends in catches and abundance indices supplemented by size frequency data. The Plenary endorsed the conclusion that there were no obvious signs of shifts in abundance or fishery dynamics and the conclusion that a change in the date for the next benchmark stock assessment of shortfin mako shark in 2024 was not warranted.

The Plenary re-iterated stock status and conservation information provided at ISC20 for North Pacific albacore (NPALB), PBF, WCNPO swordfish, Eastern Pacific ocean swordfish, Pacific blue marlin, North Pacific blue shark, and North Pacific shortfin mako shark.

The Plenary endorsed the BILLWG recommendation to expedite the next WCNPO Striped Marlin assessment for completion in 2022 and the responses prepared by the BILLWG to questions posed by WCPFC17 regarding discrepancies in catches of WCPO striped marlin stock. The Plenary revised the conservation information for WCNPO MLS with additional information related to updating the rebuilding plan with the most recent scientific information produced by the expedited benchmark assessment in 2022 and some remarks regarding the rebuilding target definition.

The ISC reviewed the Final Albacore Management Strategy Evaluation MSE Report based on five workshops over six years (2015-2020) and does not anticipate conducting further work on the Albacore MSE at this time.

The ISC work plan for 2021-22 includes benchmark stock assessments of striped marlin and blue shark, an update assessment for PBF, advancing biological sampling for billfish and shark species, engaging the IATTC and WCPFC-NC on a PBF MSE process, reviewing the ISC Operations Manual to improve accountability and transparency, and continued implementation of enhancements to database and website management.

Sarah Hawkshaw (CAN) was elected Chair of the ALBWG and Felipe Carvalho (USA) was elected Chair of the STATWG. Mikihiro Kai (JPN) and Michael Kinney (USA) were reelected to their second 3-yr term as Chair and Vice-Chair, respectively, of the SHARKWG.

6. The NC Chair expressed concern regarding the ISC recommendation to postpone the WCNPO swordfish assessment and to expedite the striped marlin assessment instead, pointing out that the swordfish is one of the three stocks the NC is responsible for, whereas the striped marlin is not, and that no management measures are taken for the swordfish yet while IUU fishing concerns exist for this stock.

7. The ISC Chair explained that discussions regarding the stock boundaries for swordfish are ongoing and need to be resolved before a new assessment can be conducted. Furthermore, the recommendation to bring the striped marlin assessment forward was made in light of the many questions the ISC received regarding this species.

8. On North Pacific striped marlin, the USA believed that the rebuilding target should be based on a dynamic SSB_0 . A 2019 study co-authored by ISC Billfish WG members found the stock-recruitment dynamics for striped marlin to be nonstationary, which would support the use of a dynamic SSB_0 . On the appropriate time frame for calculating the dynamic SSB_0 , the USA suggested that the appropriate time frame could be derived either by conducting a change point analysis on the recruitment time series to identify the appropriate time window or by scaling the time frame based on the relative difference in mean generation times between tunas and striped marlin. The USA believed this would result in a time frame covering the most recent 15-20 years since striped marlin have a longer lifespan than tunas, and would welcome the ISC to derive the appropriate time frame by applying either of these or other appropriate methodologies.

9. The NC noted the Report of ISC21 (NC17-IP-01) as reviewed.

1.4.2 Report from SC

10. SK Soh (WCPFC) summarized the key outcomes from the 17th Regular Session of the Scientific Committee (SC17).

SC17 was held as an electronic meeting on 11-19 August 2021. The meeting was chaired by the Vice-Chair Tuikolongahau Halafihi (Tonga). The 2020 provisional total tuna catch in the Convention Area was around 2,668,063 mt, which is around 80% of the total Pacific Ocean catch of 3,354,965 mt and around 52% of the global tuna catch of 5,101,520 mt. The total estimated delivered value of tuna catch declined 16% to USD 4.9 billion in 2020. Key issues considered by the four theme sessions, especially related to the Northern Committee, include publishing aggregated size data via the WCPFC public domain web page, acceptance of ISC's stock status and conservation advice for Pacific blue marlin, peer review of 2020 yellowfin tuna stock assessment in 2022, the progress of developing a WCPFC harvest strategy (HS) framework and recommendation of 2022 SC work program and budget to the Commission. Next meeting dates will be 10-18 August 2022 and the meeting venue is to be determined. Details are available in the *SC17 Outcomes Document* (NC17-IP-02).

AGENDA ITEM 2 — CONSERVATION AND MANAGEMENT MEASURES

2.1 Pacific bluefin tuna (CMM 2020-02)

11. The NC reviewed the outcomes of the 6th Joint IATTC and WCPFC-NC Working Group Meeting on the Management of Pacific Bluefin Tuna (JWG06) as outlined in the Chairs' Summary (**Attachment C**).

12. The NC Chair presented NC17-WP-03 (*NC Chair's Draft Amendment on CMM for PBF based on the Results of JWG06 Meeting*) and NC17-WP-04 (*Draft Harvest Strategy for PBF Fisheries - NC Chair's proposed revision to HS 2017-02*). He explained that the JWG06 reached agreement on the substance of the revisions but was unable to draft the texts during its meeting. Instead, it tasked the NC Chair with working intersessionally with members to prepare a draft revised CMM and a draft HS in advance of NC17.

13. In response to a question from China, the NC Chair clarified that paragraph 4 of the draft revised CMM is a threshold provision that applies to all CCMs, not just those of the NC and that if catch of one CCM exceeds the threshold, the NC will work out an appropriate response, whereas no underage provision of such threshold will be applied.

14. The USA stated that the recommendations of the JWG06 must be adopted by both RFMOs and said that it is prepared to join the consensus but could change its position at WCPFC18 if a complementary measure cannot be adopted by IATTC.

15. The FFA members of the NC (the Cook Islands, Fiji, and Vanuatu) thanked the ISC for the review and noted, as they had consistently expressed, that there remains a lot of uncertainty in the stock assessment for PBF. The assessment is essentially based on one model only, the "base case." The probabilistic statements regarding achievement of rebuilding targets are generated only by considering the statistical uncertainty in this one model, plus projected recruitment variability. The management advice therefore takes no account of uncertainty in model parameters such as steepness and natural mortality, which are highly uncertain due to the lack of information on PBF early life history stages and yet this uncertainty is

not recognized at all in the projections in which the probabilities of meeting the rebuilding targets are computed. The FFA members believed that a more robust assessment is needed to make a clear determination of the effectiveness of any measures that are taken to rebuild this stock.

16. S. Nakatsuka, ISC PBFWG Chair, offered an explanation to the scientific points raised by the FFA members. Grid approach, currently applied for the assessments of some other WCPFC stocks such as tropical tunas, is warranted for assessments which have uncertainty axes which are influential but cannot be chosen. In the case of PBF assessment, ISC checked the usual uncertainty axes such as natural mortality, recruitment deviation, maturity schedule, data weighting and steepness. Though the evaluation of steepness is still incomplete, it was explained last year at the SC that the current assessment is robust to those uncertainties (i.e., they are not influential). Also, the model fits to the data, such as CPUEs and size composition, very well, much better than other assessments. Based on those diagnostics, ISC concluded that grid approach, which is necessary for uncertain assessments but would blur the conclusion, is not warranted for PBF assessment and used the best-model approach. With regard to the projection, ISC currently assumes historical average recruitment, not only because it was so instructed by WCPFC but also because ISC currently does not see a trend in recruitment of PBF. However, ISC will continue to review the validity of the recruitment scenario, as instructed. It also needs to be noted that the current proposal by the JWG06 will achieve both rebuilding targets based on the 2020 assessments with very high probability, with only slightly delayed recovery compared with the current catch level. Based on those, the ISC PBFWG Chair did not agree that the PBF assessment is more uncertain than other WCPFC stocks nor that the results are “artificially optimistic.” Lastly, he emphasized that it needs to be recalled that those results were presented in detail last year at the WCPFC SC. ISC and IATTC concluded this is the best available scientific information of PBF and the WCPFC SC also accepted the results last year with certain caveats and concerns. If the results are now not used, it means that suddenly there came to be no best available science for the basis of discussion, one year after the results were presented.

17. Japan believed that the proposed increase to the catch limits is within the scenario indicated by the ISC, that any uncertainty is accounted for by said scenario together with the HS, and that the proposed increase is sufficiently precautionary. Japan expressed its willingness to continue to engage with the FFA members to address its concerns.

18. The USA believed that the NC has been sufficiently cautious in managing the stock, that the proposed revisions are being made within the stock rebuilding framework and that the probability of remaining on schedule for rebuilding the stock remains very high. Furthermore, the stock assessment was completed in 2020 and has since been considered and endorsed by the SC and the JWG in 2020 and 2021 for management use, and the concerns about uncertainty that the FFA members have raised at this meeting were not raised at any of the aforementioned meetings. The USA also pointed out that all stock assessment models include a degree uncertainty but the ISC has continually worked to improve its model to account for these uncertainties and the USA does not consider the uncertainties in the model to be a concern.

19. The FFA members noted other members’ commitment to continue to engage with the FFA members ahead of WCPFC18 and said that it would not block consensus but would continue to give careful consideration to the information provided regarding its technical concerns with the stock assessment and whether it considers the assessment to be robust to the uncertainties.

20. The Chair encouraged interested members to continue discussions and address each other’s concerns before WCPFC18 towards adoption of the CMM. He also pointed out that, because the distribution of the PBF spans the Eastern and Western Pacific Oceans, the NC and the IATTC coordinate their actions to manage the stock through the JWG. The IATTC is scheduled to meet before the WCPFC Commission, at which it will consider the measures recommended by the JWG06. If the IATTC adopts the recommended

measures but the WCPFC is unable to do so, this would create great difficulty in coordinating the actions of the two RFMOs next year.

21. The ISC Chair suggested that under the Monitoring Strategy section of the revised HS in NC17-WP-04, the definition of a “drastic drop” in recruitment should be defined. The NC requested the ISC to discuss this matter further at its next meeting and share its recommendations with the NC at NC18.

22. **The NC recommends that the Commission adopt the revised *Conservation and Management Measure for Pacific Bluefin Tuna* in Attachment D.**

23. **The NC recommends that the Commission adopt the revised *Harvest Strategy for Pacific Bluefin Tuna Fisheries* in Attachment E.**

24. The NC Chair explained that the management strategy evaluation (MSE) for PBF is still being developed. He explained that the JWG06 discussed the MSE process in its meeting and agreed on the facilitation of the process.

25. The United States noted that there are several portions of the harvest strategy particularly the performance evaluation section that could be updated to reflect decisions from NC15, and suggested that such changes could be considered next year at the NC and JWG.

26. The MSE for PBF was further discussed as part of the work programme under Agenda Item 3.

27. Regarding the development of a catch documentation scheme for PBF, the NC Chair reported that the JWG agreed to continue this work next year.

28. Chinese Taipei, Japan and the USA presented NC-17-DP-01 with proposed *NC17 Requests to the ISC* to perform projections based on the new stock assessment and on catch increases agreed to at JWG06 as well as some additional scenarios, to evaluate the recruitment scenario and make recommendations on whether a different recruitment scenario should be used, and to analyze the impact of the application of the new conversion factor in the proposed revised CMM.

29. The ISC PBFWG Chair asked if it would be acceptable to only provide projections based on catch limits rather than both catch and effort limits as it would be difficult to conduct the projections based on effort limits.

30. The USA agreed and asked that the rationale for doing so be included when providing the projections.

31. The ISC PBFWG Chair requested clarification on which factors could be adjusted when developing additional scenarios for achieving the proportional fishery impacts on SSB specified in requests 1a and 1b.

32. The USA suggested that the ISC first consider whether changes in the large fish catch limits in the WPO and changes in the catch limit in the EPO could achieve the aforementioned proportional fishery impacts, and, if that is not possible, to then consider changes in the small-fish limits and any other changes as necessary.

33. **The NC adopted the proposed *NC17 Requests to the ISC* in Attachment F.**

2.2 North Pacific albacore (CMM 2019-03)

2.2.1 Reports from CCMs and Observers

34. The NC reviewed working paper NC17-WP-01, especially the summary table of members' updated information on NPALB fishing effort data (**Attachment G**).

35. Japan pointed out that Vanuatu had made several changes to its baseline effort data, and sought clarification from Vanuatu regarding the reason for these changes.

36. Vanuatu explained that, at NC16, it presented its effort limits using 2004 effort as it had a very low coverage of catch and effort data for vessels for the years 2002 and 2003. Since then it has collected more historical catch data to improve this calculation. However, the data coverage is still very low. Because Vanuatu had confirmation that a good number of its vessels who were licensed then were in fact longline vessels fishing for NPALB, it therefore resorted to the option of using the number of vessels who were licensed in 2002-2004 instead, and updated its 2004 effort baseline using the number of vessels licensed as the average. Vanuatu also pointed out that this has been a very difficult issue during these early years, when it was still developing systems such as VMS and data collection databases.

37. Japan recognized the ongoing efforts being made by Vanuatu to increase its data coverage and suggested that Vanuatu should not increase its fishing effort from the current levels until those efforts are completed, or it should confirm the appropriate effort data for 2002-2004 by NC18 and provide that information to the meeting for further discussions on setting an appropriate effort baseline.

38. Vanuatu explained that it has exerted much effort to provide what it believes to be the most reliable estimate of its baseline fishing effort and vessels during 2002-2004. Vanuatu said that it would be willing to consider any data that other members have and would want Vanuatu to consider. Otherwise, it believes that the information it has provided is based on all available data and does not expect it to change again.

39. The USA pointed out a discrepancy in Korea's effort data for 2002-2004, whereby it has zero vessels but 1,072 fishing days. Korea explained that it has no vessels targeting NPALB and that the fishing days is that of vessels that caught NPALB as bycatch. Korea stated its intent to revise the fishing days to zero.

40. The Philippines explained that it does not target NPALB and the number of vessels and vessel days should therefore be zero, rather than a blank.

41. China pointed out that Vietnam's catch of NPALB was made outside the WCPFC Convention Area and should therefore be deleted from the table.

42. The NC requested members to update their catch and effort reports and submit them to the Secretariat so the Secretariat can update the summary table accordingly.

43. The NC reaffirmed the importance of reviewing members' catch and effort data as a way to ensure members are comfortable with each other's implementation of the CMM and to strengthen compliance. The NC agreed to continue holding such discussions at its next meeting.

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

44. The ISC Chair reiterated that the ISC's latest work on the MSE for NPALB can be found in the Final Albacore MSE Report (NC17-IP-06) and that the ISC does not anticipate conducting further work on the MSE at this time. Before moving forward with this process, the information in the report needs to be

reviewed and digested by managers and stakeholders. Furthermore, the ISC would need an analyst to be able to conduct further work.

45. D. Tommasi presented an update on the ISC's MSE process.

The ISC's Albacore Working Group (ALBWG) conducted an MSE for NPALB to examine the performance of alternative harvest control rules (HCRs) and associated reference points for NPALB. Performance was evaluated based on management objectives pre-agreed upon with managers and stakeholders in a series of workshops. Management objectives and performance metrics were finalized in October 2017, at the 3rd ISC NPALB MSE Workshop in Vancouver, Canada, where candidate reference points and HCRs for testing were also agreed upon. An initial set of MSE results was presented to managers and stakeholders during the 4th ISC NPALB MSE Workshop in February 2019 in Yokohama, Japan. Managers and stakeholders at the 4th MSE Workshop recommended removal from further consideration of two candidate harvest strategies and target reference points (TRPs) and assessment of performance of additional candidate HCRs focused on the best performing TRPs of F40 and F50. The TRPs are based on fishing intensity (1-SPR), where SPR is the spawning potential ratio. A fishing intensity of F40 would result in 40% of the unfished SSB per recruit and is equivalent to a fishing intensity of 0.6. The results presented focused on evaluation of the 16 HCRs and associated reference points proposed at the 4th MSE Workshop.

The MSE tested HCR performance under total allowable catch (TAC) control and mixed control. In mixed control, the longline fleets are subject to a TAC, while the surface fleets are controlled by total allowable effort (TAE). Mixed control maintained higher and less variable stock biomass than TAC control as the catches of surface fleets under effort control responded quickly to changes in biomass and their catch levels were not impacted by assessment errors in biomass estimates. Nevertheless, the NPALB stock is in good condition, and even when considering the range of uncertainties in stock productivity, recruitment variability, availability to the EPO surface fleet, observation, assessment, and implementation error, SSB rarely fell below the WCPFC's limit reference point (LRP) of 20% unfished dynamic spawning stock biomass (20%SSB0_d) when managed by any of the candidate HCRs under both TAC and mixed control and when simulation outcomes across all reference scenarios were considered. Under mixed control, there was a tradeoff between the odds of biomass being above the 20%SSB0_d LRP and catch metrics. F40 rules performed best in terms of catch metrics but worst in terms of biomass metrics. F50 rules performed best in terms of biomass and worst in terms of catch metrics. Under TAC control, there was a tradeoff between fishing intensity and catch variability. F40 rules had higher median catch but also higher catch variability, leading to the probability of catch being above historical being comparable between F50 and F40 HCRs. Given the trade-offs between different performance metrics, the choice of a preferred HCR is dependent on what each manager and stakeholder most values among the different management objectives and their level of risk aversion.

46. The NC reviewed the progress of the ISC's MSE process. The NC encouraged members to work with their domestic stakeholders to deepen understanding of the MSE process and to be prepared to discuss and advance the process collectively at NC18.

47. Pew encouraged parties to prepare proposals for adopting an HS for NPALB at NC18.

48. The NPALB MSE was further discussed as part of the work programme under Agenda Item 3.

2.2.3 Review of the CMM 2019-03

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

2.3 North Pacific swordfish

50. The NC Chair reiterated his concern about any potential negative impacts on this stock, particularly in light of the IUU fishing concerns that exist for the stock, and urged members to present proposals for developing the CMM at NC18.

51. Japan shared the NC Chair's concern and expressed its intention to submit such a proposal at NC18.

52. The USA said it looked forward to Japan's proposal and expressed its interest in providing input to the proposal.

AGENDA ITEM 3 — FUTURE WORK PROGRAMME

3.1 Work Programme for 2022-2024

53. **The NC reviewed and adopted the 2022-2024 Work Programme for the Northern Committee (Attachment H).**

54. The Ocean Foundation pointed out that the definition of an HS in CMM 2014-06 has six clear elements that include MSE testing, and that the practice of the NC of calling the current NPALB and PBF management measures and harvest strategies is confusing and does not match the aforementioned definition. The Ocean Foundation encouraged the NC to heed said definition so there is a clearer distinction between current management measures and future MSE-based harvest strategies.

AGENDA ITEM 4 — OTHER MATTERS

4.1 Next meeting

55. **Japan offered to host the Eighteenth Regular Session of the NC, if an in-person meeting is possible. Its venue and time will be informed in due course.**

4.2 Other business

56. There was no other business.

AGENDA ITEM 5 — CLOSE OF MEETING

57. **The NC reviewed and adopted the Summary Report.**

58. The meeting was brought to a close on 7 October 2021.

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**The Commission for the Conservation and Management of
Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
Northern Committee
Seventeenth Regular Session
Electronic Meeting
5-7 October 2021**

AGENDA

AGENDA ITEM 6 — 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 7 — 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 2022-2024**

AGENDA ITEM 4 — OTHER MATTERS

- 4.1 Next meeting**
- 4.2 Other business**

AGENDA ITEM 5 — CLOSE OF MEETING

**The Commission for the Conservation and Management of
Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
Northern Committee
Seventeenth Regular Session
Electronic Meeting
5-7 October 2021**

**CHAIRS' SUMMARY OF THE 6TH JOINT IATTC AND WCPFC-NC WORKING GROUP
MEETING ON THE MANAGEMENT OF PACIFIC BLUEFIN TUNA**

AGENDA ITEM 1. OPENING OF THE MEETING

1. The 6th Session of the Joint IATTC and WCPFC-NC Working Group Meeting on the Management of Pacific Bluefin Tuna (JWG06) was held online on 27-29 July 2021. 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 JWG06 is included in **Annex A**.

AGENDA ITEM 2. ADOPTION OF AGENDA AND MEETING PROCEDURES

3. Ms. Lowman welcomed participants and outlined the meeting procedures and the agenda.
4. 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

5. Dr. Shuya Nakatsuka (Japan), Chair of the ISC Pacific Bluefin Tuna Working Group (PBFWG), provided a report of the workgroup's intersessional workshop. The PBFWG reviewed 2020 catch data, abundance indices up to 2020, and the current stock assessment (conducted in March 2020), and discussed the management strategy evaluation (MSE) and close-kin mark recapture. The PBFWG also noted that there has been no new information in 2021 that necessitates a revision of the 2020 ISC stock status and conservation information on PBF.
6. Japan stated that it intends to transfer 250 tons of its catch limit for small PBF to large PBF until at least 2034 and requested that the ISC reflect this transfer into future stock assessment projections.
7. The US pointed out that the outcomes of this meeting may impact what projections are requested of the ISC PBFWG and that it was important to provide clear guidance to the ISC before the close of the meeting.

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

8. Dr. Alex da Silva (IATTC) presented a review of the results of the 2020 PBF stock assessment by the IATTC SAC, rebuilding targets and harvest strategies, and future PBF projections, as well as the joint

recommendations of the IATTC staff and the SAC. The IATTC staff and the SAC recommends the extension of the provisions of Resolution C-18-01, as already extended by Resolution C-20-02, and that the Commission take note that increased catches based on the scenarios analyzed are possible under the harvest strategy prepared by the joint tuna RFMOs Working Group. The choice of catch scenario should take into account the desired rebuilding rate and the distribution of catch between small and large bluefin.

9. The report of the 12th IATTC-SAC meeting was noted as reviewed.

10. The report of the 17th WCPFC-SC meeting was unavailable because it has not yet convened.

AGENDA ITEM 4. REPORTS ON THE IMPLEMENTATION OF PACIFIC BLUEFIN TUNA MEASURES

11. The Joint WG reviewed WCPFC and IATTC members' implementation reports on conservation and management measures for PBF.

12. Japan raised some questions on the USA reported 2020 recreational catch in the EPO and how recreational catch is managed with respect to IATTC obligations. The USA noted that it was the only country that reported on its recreational catch and would welcome others sharing information about their management of recreational PBF catch at future JWG meetings. There was agreement to continue discussing these issues on the margins.

13. Co-Chair Miyahara reminded members that the reporting requirement related to the WCPFC CMM was established not only to report fishing catch and effort but to track compliance and allow members to identify any difficulties in implementing the management measures so that these could be addressed as needed.

AGENDA ITEM 5. REVIEW OF CONSERVATION AND MANAGEMENT MEASURES FOR PACIFIC BLUEFIN TUNA

14. Japan presented a proposal to amend CMM 2020-02 for Pacific Bluefin Tuna.

15. The United States presented a proposal for the establishment of Harvest Control Rules for the second rebuilding period.

16. The JWG discussed possible amendments to CMM 2020-02 for Pacific Bluefin Tuna and C-20-02 Measures for the Conservation and Management of Pacific Bluefin Tuna in the Eastern Pacific Ocean and agreed upon the package of amendments outlined in **Annex C**. JWG recommends the adoption of those amendments by the Northern Committee and the IATTC, respectively.

17. Regarding the provision on the transfer of small fish to large fish quotas in **Annex C**, the JWG agreed that up to 10% of small fish catch limit per CCM could be transferred using the conversion factor of 0.68 (25% in the case of parties who do not have a Western and Central Pacific Ocean (WCPO) large fish catch limit), and that the rest of the small fish catch limit could be transferred at a ratio of 1:1. The JWG agreed that the use of the 0.68 conversion factor should be allowed for three years (i.e. 2022-2024) and then reviewed.

18. The JWG agreed that the provision on 0% increase in catch for small fish in **Annex C** applies to the WCPO only.

19. The JWG discussed draft Harvest Control Rules for the second rebuilding period to be incorporated

in HS 2017-02 for Pacific Bluefin Tuna Fisheries and C-18-02 on a Long-Term Management Framework for the Conservation and Management of Pacific Bluefin Tuna in the Eastern Pacific Ocean as outlined in **Annex D** and recommends their adoption by the Northern Committee and the IATTC, respectively.

59.

20. Chinese Taipei noted the importance of maintaining 2002-2004 baseline year in the measure, and proposed a WCPO limits table to be discussed in the NC17 meeting, with an aim to include it in the measure.

AGENDA ITEM 6. **FUTURE (2022) JWG MEETING**

21. Japan offered to host the next JWG meeting at a date to be determined to precede both NC and IATTC meetings, subject to the state of the COVID-19 pandemic.

AGENDA ITEM 7. **OTHER BUSINESS**

7.1 Impacts of COVID-19 pandemic

22. The JWG discussed the ongoing MSE work and noted that progress has been delayed due to the COVID-19 pandemic.

23. The JWG noted the ISC's advice on the PBF MSE as outlined in JWG06-WP-02. The JWG noted that Japan has provided a specialist for the development of the MSE work for the WCPO and encouraged interested parties to provide a specialist for the Eastern Pacific Ocean (EPO). The JWG also encouraged interested parties to organize stakeholder workshops for the EPO and the WCPO respectively, in advance of the next JWG meeting, to facilitate further discussion by the JWG of management inputs for the MSE, in particular, operational management objectives and the anticipated management framework (e.g., how to balance the eastern and western Pacific fisheries).

24. The United States recognized the importance of stakeholder input but expressed some concern about the efficacy of the past stakeholder workshops. It suggested that, if it is not possible to hold JWG stakeholder workshops in 2022, members should be encouraged to hold their own domestic workshops prior to the JWG meeting to gather stakeholder input to enhance the JWG discussion of management objectives and other inputs at next year's meeting. The United States noted the importance of the JWG providing guidance to the ISC on management objectives and performance metrics in order to further develop the harvest strategy for long-term management.

25. Japan reported that Mr. Shingo Ota (Japan) will continue to chair the Catch Documentation Scheme (CDS) Working Group and intends to hold a meeting of the CDS Working Group in conjunction with the next JWG meeting. Japan also pointed out that the scope of the electronic CDS system e.g., a consolidated system to cover all tunas, one for Pacific bluefin tuna, etc. remains a fundamental issue that the Commission must give advice on.

26. The JWG encouraged Japan to begin preparations with interested parties towards holding next year's meeting of the CDS Working Group.

7.2 Other

27. The JWG noted the progress being made on close-kin recapture analysis and encouraged members to continue to develop this work.

28. The US proposed requests to the ISC (**Annex E**). JWG had no time to discuss them but requested the concerned parties including the US and Japan to develop the proposal and agreed to finalize it through

proper process in both the NC and IATTC before the ISC starts the next assessment works for PBF tuna.

AGENDA ITEM 8. ADOPTION OF REPORT

29. [The IATTC-NC JWG06 adopted the report.]

AGENDA ITEM 9. CLOSE OF MEETING

30. [The meeting was brought to a close on 29 July 2021.]

ANNEXES

Annex A – List of participants

Annex B – Agenda

Annex C – Proposed amendments to CMM 2020-02 for Pacific Bluefin Tuna and C-20-02 Measures for the Conservation and Management of Pacific Bluefin Tuna in the Eastern Pacific Ocean

Annex D – Proposed Harvest Control Rules for the Second Pacific Bluefin Tuna Rebuilding Period

Annex E – USA Proposal on “Joint Working Group Recommendations on Requests to the ISC”

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE
MANAGEMENT OF PACIFIC BLUEFIN TUNA
SIXTH SESSION**

ELECTRONIC MEETING
8am-11am, Japan Standard Time
27-29 July 2021

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**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE
MANAGEMENT OF PACIFIC BLUEFIN TUNA
SIXTH SESSION**

ELECTRONIC MEETING
8am-11am, Japan Standard Time
27-29 July 2021

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 conservation and management measures (CMMs) and resolutions for Pacific bluefin tuna**
- 5. Review of Conservation and Management Measures for Pacific Bluefin Tuna**
- 6. Future (2022) JWG meeting**
- 7. Other business**
 - 7.1 Impacts of COVID-19 pandemic
 - 7.2 Other
- 8. Adoption of Report**
- 9. Close of meeting**

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE
MANAGEMENT OF PACIFIC BLUEFIN TUNA
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**Proposed amendments to CMM 2020-02 for Pacific Bluefin Tuna and C-20-02 Measures for the
Conservation and Management of Pacific Bluefin Tuna in the Eastern Pacific Ocean**

Potential Package

- Catch increases
 - 15% increase for WCPO large fish; 0% increase for small fish
 - Additional 30 mt of WCPO large fish for parties who do not have a large fish catch limit
 - 15% increase for EPO
 - Additional 200 mt increase for EPO
- JWG would agree to recommend these increases in each area but the new catch level for each CCM with PBF fisheries would be represented in a table that is agreed to in NC (Japan, Korea and Chinese Taipei) and IATTC (Mexico and USA), respectively.
- In the WCPO: the transfer of small fish to large fish quotas allowed, with up to 10%^{1*} of small fish catch limit per CCM using the conversion factor of 0.68.
- In the WCPO: a 17% carryover in three years (2021-2022, 2022-2023, and 2023-2024).
- In the EPO: the same carry forward framework will be used in the biennial cycle that has been the typical format of the IATTC measure through 2024. This will result in an amendment to the current measure that adds 3 years (2022-2024) onto the current measure. As such, the resolution would contain two biennial cycles within a single resolution (i.e., 2021-2022 and 2023-2024).

¹ Notwithstanding this provision, parties who do not have a WCPO large fish catch limit may apply 25% instead of 10%.

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE
MANAGEMENT OF PACIFIC BLUEFIN TUNA
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ELECTRONIC MEETING
8am-11am, Japan Standard Time
27-29 July 2021

Proposed Harvest Control Rules for the Second Pacific Bluefin Tuna Rebuilding Period

The harvest control rules during the second rebuilding period below will be applied based on the results of stock assessments and SSB projections to be conducted by ISC.

With respect to objective 1 of this harvest strategy:

If the SSB projection indicates that the probability of achieving the second rebuilding target by 2034 or 10 years after reaching the initial rebuilding target, whichever is earlier, is less than 60%, management measures shall be modified to increase it to at least 60%. For this purpose, the ISC will be requested, if necessary, to provide information on possible management measures to achieve 60% probability.

If the SSB projection indicates that the probability of achieving the second rebuilding target by 2034, or 10 years after reaching the initial rebuilding target, whichever is earlier, is at 75% or larger, fishery controls may be changed, including adjustment of catch limits, as long as the probability is maintained at 70% or larger. For this purpose, ISC will be requested, if necessary, to provide relevant information on potential fishery controls.

With respect to objectives 2 and 3 of this harvest strategy:

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 will be requested, if necessary, to provide relevant information, including projected proportional fishery impact of potential management measures changes.

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.

**JOINT IATTC AND WCPFC-NC WORKING GROUP MEETING ON THE
MANAGEMENT OF PACIFIC BLUEFIN TUNA
SIXTH SESSION**

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8am-11am, Japan Standard Time
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**USA Proposal on
“Joint Working Group Recommendations on Requests to the ISC”²**

1. The Joint Working Group recommends the Northern Committee (NC) request the ISC perform projections of catch increases agreed to at this 6th Meeting of the Joint Working Group and provide the relative fishery impact of WCPO fisheries and EPO fisheries on SSB over the projection period. Additionally, the Joint Working Group requests the ISC provide at least one scenario (with projection) of effort and catch limits for EPO and WCPO that would satisfy the rebuilding objective and by 2031 achieve a relative (or proportional) fishery impact on SSB of approximately 75% from WCPO fisheries and 25% from EPO fisheries.
2. The JWG recommends that the NC emphasize to the ISC the standing request in the current harvest strategy that “[t]he ISC...periodically evaluate whether the recruitment scenario used during the second rebuilding period is reasonable given current conditions, and to make recommendations on whether a different recruitment scenario should be used.” In 2022 and with each benchmark or update stock assessment thereafter, the ISC should conduct sensitivity analyses using alternative recruitment scenarios and advise whether the long-term average recruitment scenario represents the most likely future recruitments. If the ISC recommends alternative recruitment scenarios, then they should be included as projection runs in the benchmark or update stock assessment.
3. The JWG recommends that the NC request the ISC analyze in the projections the impacts of a transfer of 10% mt of small fish limit to large fish limit using a conversion factor of 0.68:1 small:large.

² The JWG did not have time to discuss this US proposal but requested that concerned parties including US and Japan consider these and other requests and finalize a list of requests to the ISC through the proper process in both the NC and the IATTC before the ISC starts the next assessment work for Pacific bluefin tuna.

**The Commission for the Conservation and Management of
Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
Northern Committee
Seventeenth Regular Session
Electronic Meeting
5-7 October 2021**

**CONSERVATION AND MANAGEMENT MEASURE FOR
PACIFIC BLUEFIN TUNA**

Conservation and Management Measure 2021-XX

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, CMM2017-08, 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 SSB_{MED} by 2024 with at least 60% probability, is reached with 99% or 100% probability, and that the risk of SSB falling below SSB_{loss} 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;

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

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

Pacific bluefin tuna 30kg or larger

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

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. 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 limit¹.

6. 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 kg². CCMs shall not use the catch limit for Pacific bluefin tuna 30 kg or larger to catch Pacific bluefin tuna smaller than 30 kg.

¹ 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.

² 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

7. 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 year.³
 - 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. 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. CCMs shall intensify cooperation for effective implementation of this CMM, including juvenile catch reduction.
10. CCMs, in particular those catching juvenile Pacific bluefin tuna, shall take measures to monitor and obtain prompt results of recruitment of juveniles each year.
11. 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. CCMs shall cooperate to establish a catch documentation scheme (CDS) to be applied to Pacific bluefin tuna in accordance with the **Attachment** of this CMM.
13. 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. 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

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.

³ 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).

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

17. 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. 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. This CMM replaces CMM 2020-02. 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 2022.

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. |

**The Commission for the Conservation and Management of
Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
Northern Committee
Seventeenth Regular Session
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5-7 October 2021**

HARVEST STRATEGY FOR PACIFIC BLUEFIN TUNA FISHERIES

Harvest Strategy 2021-XX

Introduction and scope

This harvest strategy has been prepared in accordance with the Commission's Conservation and Management Measure on Establishing a Harvest Strategy for Key Fisheries and Stocks in the Western and Central Pacific Ocean.

Although the provisions of this harvest strategy are expressed in terms of a single stock, they may be applied to multiple stocks as appropriate and as determined by the Northern Committee.

1. Management objectives

The management objectives are, first, to support thriving Pacific bluefin tuna fisheries across the Pacific Ocean while recognizing that the management objectives of the WCPFC are to maintain or restore the stock at levels capable of producing maximum sustainable yield, second, to maintain an equitable balance of fishing privileges among CCMs and, third, to seek cooperation with IATTC to find an equitable balance between the fisheries in the western and central Pacific Ocean (WCPO) and those in the eastern Pacific Ocean (EPO).

2. Reference points

Because steepness in the stock-recruitment relationship is not well known but the key biological and fishery variables are reasonably well estimated¹, the stock of PBF is to be treated as a Level 2 stock under the Commission's hierarchical approach for setting biological limit reference points.

2.1 Rebuilding targets

Initial rebuilding target: The initial rebuilding target for the PBF stock size is the median SSB estimated for the period 1952 through 2014, to be reached by 2024 with at least 60% probability.

Recruitment scenario during initial rebuilding period: The low recruitment scenario (resampling from the relatively low recruitment period (1980-1989)) or the recent recruitment scenario (resampling from the last 10 years), whichever is lower, will be used for the ISC's SSB projections until 2024 or until the SSB reaches the initial rebuilding target, whichever is earlier. The ISC is requested to periodically evaluate whether the recruitment scenario used during the initial rebuilding period is reasonable given current conditions, and to make recommendations on whether a different scenario should be used. If ISC recommends a different scenario, this will be considered by the NC.

¹ See the information provided by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (WCPFC-NC9-2013/IP-03) in response to a request made by the Northern Committee at its Eighth Regular Session (Attachment F of the report of NC8).

Second rebuilding target: The second rebuilding target for the PBF stock size is $20\%SSB_{F=0}^2$, to be reached by 2034, or 10 years after reaching the initial rebuilding target, whichever is earlier, with at least 60% probability.

However, if: (1) the SSB reaches the initial rebuilding target earlier than 2024; (2) ISC recommends a recruitment scenario lower than the average recruitment scenario; and (3) the SSB projections indicate that the second rebuilding target will not be achieved on this schedule, the deadline for rebuilding may be extended to 2034 at the latest.

Also, if there is a recommendation from the Northern Committee that $20\%SSB_{F=0}$ is not appropriate as the second rebuilding target, taking into account consideration from IATTC, scientific advice from ISC, IATTC or WCPFC SC, and socioeconomic factors, another objective may be established.

Recruitment scenario during second rebuilding period: After the initial rebuilding target is reached and until the second rebuilding target is reached, the recruitment scenario to be used for the SSB projections will tentatively be the average recruitment scenario (resampling from the entire recruitment period).

The ISC is requested to periodically evaluate whether the recruitment scenario used during the second rebuilding period is reasonable given current conditions, and to make recommendations on whether a different scenario should be used. If ISC recommends a different scenario, this will be considered by the NC.

2.2 Development of reference points

The Northern Committee will develop more refined management objectives as well as limit reference point(s) and target reference point(s) through MSE process specified in Section 6.

3. Acceptable levels of risk

Until the stock is rebuilt, the Northern Committee will recommend conservation and management measures as needed to ensure rebuilding in accordance with the probabilities specified in sections 2.1 and 5 for each of the two rebuilding targets.

Once the stock is rebuilt, in accordance with Article 6.1(a) of the Convention, the Northern Committee will recommend conservation and management measures as needed to ensure that any target reference point(s) (once adopted) are achieved on average in the long term, and ensure that the risk of the stock size declining below the B-limit (once adopted) is very low.³

4. Monitoring strategy

The ISC will periodically evaluate the stock size and exploitation rate with respect to the established reference points and the report will be presented to the Scientific Committee. Until 2024, while the MSE is being developed (see section 6), the ISC is requested to conduct stock assessments in 2018, 2020 and 2022.

In order to cope with the adverse effects on the rebuilding of the stock due to drastic drops of recruitment: (1) all the available data and information will be reviewed annually, including recruitment data provided by the ISC and in National Reports; and (2) the ISC is requested to conduct in 2019, and periodically thereafter as resources permit and if drops in recruitment are detected, projections to see if any additional measure is necessary to achieve the initial rebuilding target by 2024 with at least 60% probability.

² $SSB_{F=0}$ is the expected spawning stock biomass under average recruitment conditions without fishing.

³ WCPFC13 agreed that any risk level greater than 20 percent to be inconsistent with the limit reference point related principles in UNFSA (as references in Article 6 of the Convention) including that the risk of breaching limit reference points be very low

5. Decision rules

Harvest control rules during initial rebuilding period: The interim harvest control rules below will be applied based on the results of stock assessments and SSB projections to be conducted by ISC.

(a) If the SSB projection indicates that the probability of achieving the initial rebuilding target by 2024 is less than 60%, management measures will be modified to increase it to at least 60%. Modification of management measures may be (1) a reduction (in %) in the catch limit for fish smaller than 30 kg (hereinafter called “small fish”) or (2) a transfer of part of the catch limit for small fish to the catch limit for fish 30 kg or larger (hereinafter called “large fish”). For this purpose, ISC will be requested, if necessary, to provide different combinations of these two measures so as to achieve 60% probability.

(b) If the SSB projection indicates that the probability of achieving the initial rebuilding target by 2024 is at 75% or larger, the WCPFC may increase their catch limits as long as the probability is maintained at 70% or larger, and the probability of reaching the second rebuilding target by the agreed deadline remains at least 60%. For this purpose, ISC will be requested, if necessary, to provide relevant information on potential catch limit increases.

Harvest control rules during second rebuilding period: The harvest control rules during the second rebuilding period below will be applied based on the results of stock assessments and SSB projections to be conducted by ISC.

(a) If the SSB projection indicates that the probability of achieving the second rebuilding target by 2034 or 10 years after reaching the initial rebuilding target, whichever is earlier, is less than 60%, management measures shall be modified to increase it to at least 60%. For this purpose, the ISC will be requested, if necessary, to provide information on possible management measures to achieve 60% probability.

(b) If the SSB projection indicates that the probability of achieving the second rebuilding target by 2034, or 10 years after reaching the initial rebuilding target, whichever is earlier, is at 75% or larger, fishery controls may be changed, including adjustment of catch limits, as long as the probability is maintained at 70% or larger. For this purpose, ISC will be requested, if necessary, to provide relevant information on potential fishery controls.

(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 will be requested, if necessary, 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.

The Northern Committee will, through MSE development process, develop decision rules related to the limit reference points once adopted including for the case of their being breached.

6. Performance evaluation

Until the stock is rebuilt, the Northern Committee will work with the ISC and the Scientific Committee and consult with the IATTC to identify and evaluate the performance of candidate rebuilding strategies

with respect to the rebuilding targets, schedules, and probabilities.

The ISC is requested to start the work to develop a management strategy evaluation (MSE) for Pacific bluefin tuna fisheries in 2019 and have a goal of completing it by 2024.

To support development of the MSE, ISC is encouraged to identify at least two experts and NC members are encouraged to provide additional funds for the ISC's work on the MSE.

The Joint WG will start to discuss in 2018, and aim to finalize no later than 2019, guidelines for the MSE, including at least one candidate long-term target reference point (TRP), two candidate limit reference points (LRPs) and candidate harvest control rules (HCRs), which will be provided to the ISC. Those candidate TRPs, LRPs and HCRs will be tested and changed if appropriate during the MSE development process.

In preparation for the Joint WG meeting in 2019, the ISC is requested to organize workshops in early 2018 and 2019 to support the identification of specific management objectives, including level of risks and timelines. The workshops will include managers, scientists and stakeholders, taking into account any recommendations of the Joint WG, and the number of representatives should be relatively small, as it was for the MSE workshop for North Pacific albacore.

In evaluating the performance of candidate target reference points, limit reference points, and harvest control rules, the Northern Committee, in consultation with the ISC and the Scientific Committee, should consider the following criteria:

1. Probability of achieving each of the rebuilding targets within each of the rebuilding periods (if applicable).
2. Time expected to achieve each of the rebuilding targets (if applicable).
3. Expected annual yield, by fishery.
4. Expected annual fishing effort, by PBF-directed fishery.
5. Inter-annual variability in yield and fishing effort, by fishery.
6. Probabilities of SSB falling below the B-limit and the historical lowest level.
7. Probability of fishing mortality exceeding FMSY or an appropriate proxy, and other relevant benchmarks.
8. Expected proportional fishery impact on SSB, by fishery and by WCPO fisheries and EPO fisheries.

Recognizing that developing the operating model and other aspects of the MSE will take time and additional resources, and might require further dialogue between the Northern Committee, the ISC, and the IATTC, while the MSE is in development the ISC is requested to perform this work using the best means at its disposal.

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NC17 REQUESTS TO THE ISC

1. The Northern Committee (NC) requests the ISC to perform projections based on the new stock assessment and on catch increases agreed to at the 6th Meeting of the Joint Working Group and the revised conservation and management measures adopted in WCPFC and IATTC meetings in 2021 and to provide the proportionate fishery impact of WCPO fisheries and EPO fisheries on SSB over the projection period. Additionally, NC requests that the ISC provide projections of the scenarios in the **Appendix** as well as projections with at least one scenario that achieve
 - a. Effort and catch limits for EPO and WCPO that would satisfy the rebuilding objective and by 2034, or 10 years after reaching the initial rebuilding target, whichever is earlier achieve a proportional fishery impact on SSB of approximately 75% from WCPO fisheries and 25% from EPO fisheries or
 - b. Effort and catch limits for EPO and WCPO that would satisfy the rebuilding objective and by 2034, or 10 years after reaching the initial rebuilding target, whichever is earlier achieve a proportional fishery impact on SSB of approximately 80% from WCPO fisheries and 20% from EPO fisheries.

The NC does not recommend the ISC perform projections of the scenarios performed in the 2020 stock assessment.

2. The NC reiterates to the ISC the standing request in the current harvest strategy that “[t]he ISC...periodically evaluate whether the recruitment scenario used during the second rebuilding period is reasonable given current conditions, and to make recommendations on whether a different recruitment scenario should be used.” In 2022 and with each benchmark or update stock assessment thereafter, the NC requests the ISC to conduct such an evaluation and make recommendations on whether a different recruitment scenario should be used. If the ISC recommends alternative recruitment scenarios, then they should be included as projection runs in the benchmark or update stock assessment.

3. The NC requests that the ISC analyze in the projections the impacts of a transfer of 10% for Japan and 25% for Korea of small fish limit to large fish limit using a conversion factor of 0.68:1 small:large.

Appendix: Scenarios for catch increase

West Pacific		East Pacific
Small fish	Large fish	
0	500t	500t
10%		10%
20%		20%

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**Updated information on North Pacific albacore fishing effort
(Reference: Attachment C/Annex A in NC7 Summary Report)**

Table 1. Average annual catch of North Pacific albacore (metric tonnes)

CCM	Data pertain to WCPFC Area only or entire N Pacific?	Fisheries with ANY catch of NP albacore	"Fishing for" NP albacore? (Y/N)	2006-2010 average annual catch
Canada	N Pacific	Albacore troll	Y	5,911
Total catches for Canada:				5,911
Catches in fisheries "fishing for" NP albacore:				5,911
% of total catch in fisheries "fishing for" NP albacore:				100
China	N. Pacific	Longline	Y	1,967
	N. Pacific	Longline	N	98
Total catches for China:				1,967
Catches in fisheries "fishing for" NP albacore:				1,869
% of total catch in fisheries "fishing for" NP albacore:				95
Note: Historically, there are 10 longliners seasonally operating in the high seas of Northern Pacific Ocean targeting albacore, which covered the Convention Areas of WCPFC and IATTC				
Cook Islands	N Pacific total catches	Albacore troll	Y	31
	N Pacific total catches	Longline	Y	8
Total catches for Cook Islands:				39
Catches in fisheries "fishing for" NP albacore:				39
% of total catch in fisheries "fishing for" NP albacore:				100
Fiji	N. Pacific	LL	N	1.2
Total catches for Fiji Islands:				1.2
Catches in fisheries "fishing for" NP albacore:				0
% of total catch in fisheries "fishing for" NP albacore:				0
Japan	CA only	LL Coast	Y	16,817
		LL DW	Y	4,230
		PL Coast	N	89
		PL DW	Y	24,504
		PS Coast	N	14
		PS DW	N	1,841
		GN	N	430
		Troll	N	505
		Set Net	N	52
		Others	N	36

Total catches for Japan:				48,518
Catches in fisheries "fishing for" NP albacore:				45,551
% of total catch in fisheries "fishing for" NP albacore:				94
Korea				
CA only	LL DW	Y		18
CA only	LL DW	N		157
Total catches for Korea:				175
Catches in fisheries "fishing for" NP albacore:				18
% of total catch in fisheries "fishing for" NP albacore:				10
<u>NOTE:</u> Three LL DW participated in fishing for NP Albacore in 2007 and 2008, and the catch was 87 tons.				
Philippines				
N Pacific	others	N		75
Total catches for Philippines (average for 2009-2011):				75
Catches in fisheries "fishing for" NP albacore:				0
% of total catch in fisheries "fishing for" NP albacore:				0
<u>NOTE:</u> Catches are mainly from artisanal Hook-and-Line Gear (non-targeting ALB)				
Chinese Taipei				
N Pacific	albacore LL	Y		2,548
N Pacific	LL others	N		552
Total catches for Chinese Taipei:				3,100
Catches in fisheries "fishing for" NP albacore:				2,548
% of total catch in fisheries "fishing for" NP albacore:				82
United States				
N Pacific	Albacore troll	Y		12,344
	Longline	N		288
	Gillnet	N		3
	Pole and line	N		0
	Purse seine	N		23
	Other	N		577
Total catches for United States:				13,236
Catches in fisheries "fishing for" NP albacore:				12,344
% of total catch in fisheries "fishing for" NP albacore:				93
<u>NOTE:</u>				
1) These USA (2006-2010) data may not be confirmed from figures available to the Secretariat.				
2) US response: See all our annual reports under CMM 2005-03, the latest of which is dated 30 April 2012.				
Vanuatu				
N Pacific	albacore LL	Y		2,525
N Pacific	LL others	N		135
Total catches for Vanuatu:				2,661
Catches in fisheries "fishing for" NP albacore:				2,525
% of total catch in fisheries "fishing for" NP albacore:				95
Belize				
CA only	LL	Y		95
Total catches for Belize:				95
Catches in fisheries "fishing for" NP albacore:				95
% of total catch in fisheries "fishing for" NP albacore:				100
<u>NOTE:</u> catch unsegregated by area				
Federated States of Micronesia				
CA only	LL	N		18

Total catches for FSM:				18
Catches in fisheries "fishing for" NP albacore:				0
% of total catch in fisheries "fishing for" NP albacore:				0
<u>NOTE:</u> Commenced fishery in 2009				
Marshall Islands	CA only	LL	N	N/A
Total catches for RMI:				
Catches in fisheries "fishing for" NP albacore:				
% of total catch in fisheries "fishing for" NP albacore:				
<u>NOTE:</u> Commenced fishery in 2008				

Table 1-1. Average annual catch of NP albacore during 2006-2010 (from Table 1)

Country	Target category	CA only	N Pacific
Canada	Target		5,911
	Non-Target		0
China	Target		1,967
	Non-Target		98
Cook Islands	Target		39
	Non-Target		0
Fiji	Target		0
	Non-Target		1.2
Japan	Target	45,551	
	Non-Target	2,967	
Korea	Target	18	
	Non-Target	157	
Philippines	Target		0
	Non-Target		75
Chinese Taipei	Target		2,548
	Non-Target		552
United States of America	Target		12,344
	Non-Target		892
Vanuatu	Target		2,525
	Non-Target		136
Belize	Target	95	
	Non-Target	0	
FSM	Target	0	
	Non-Target	18	
Marshall Islands	Target		
	Non-Target		
Total Catch			
		CA only	N Pacific
Total catch	Target	45,664	25,236
	Non-T	3,142	1,754
	Total catch	48,806	26,990
Proportion	Target	94%	94%
	Non-T	6%	6%
		100%	100%

Table 2. Fishing effort fishing for North Pacific albacore

CCM	Area ³	Fishery ⁴	2002-04 Average		2005		2006		2007		2008		2009		2010	
			No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days
Canada ⁵	N Pacific	ALB troll	215	8,898	213	8,564	174	6,243	207	6,902	137	5,773	138	6,540	161	7,294
	CA ⁶ only	ALB troll	8	256	1	56	0	0	0	0	0	0	0	0	0	0
China	N Pacific	LL	10	1,250	10	1,230	10	1150	2	260	2	250	2	280	2	240
Cook Islands	N Pacific	ALB troll	4	183	2	240	2	171	1	57	1	0	0	0	0	0
	N Pacific	LL	1	2	1	4	0	0	1	37	1	17	0	0	0	0
Fiji ⁷	N Pacific	LL	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Japan ⁸	CA only	LL Coast	296	40,988	289	41,197	287	43,366	273	43,480	276	40,030	280	43,536	286	45,877
		LL DW	633	26,851	591	21,548	538	21,186	494	21,712	480	17,823	361	12,060	342	13,084
		PL DW	141	19,839	134	20,442	125	16,059	106	16,931	104	15,667	104	15,248	101	15,541
Korea ⁹	CA only	LL DW	0 ¹⁰	0 ⁸					3	268	3	107				
Philippines ¹¹	N Pacific	Handline	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chinese Taipei ¹²	N Pacific	ALB LL	25		23	2,363	24	4,156	21	3,360	18	2,603	13	2,082	20	2,093
USA	N Pacific	ALB troll		13,311		11,552		10,892		11,552		11,138		13,339		13,076
	CA only	ALB troll		789		371		66		42		*		*		*
Vanuatu ¹³	N Pacific	LL	37	3,407	26	1,983	32	2,868	23	2,133	20	1,883	14	1,248	10	1,053
Belize ¹⁴													40		49	

* Data in the WCPO were confidential

³ Data pertain to WCPFC Area only or entire N Pacific?

⁴ Fisheries "fishing for" NP albacore

⁵ NOTE: For Canada no fishing inside the CA since 2005

⁶ Convention Area

⁷ Fiji do not have any vessels targeting North Pacific Albacore in the NP Ocean.

⁸ Japanese albacore data indicates the fisheries in north of the equator within CA.

⁹ Korea's fishing effort "fishing for" NP albacore occurred in 2007 and 2008, and non-target fishing effort occurred every year in the North Pacific.

¹⁰ Korea does not have any vessels targeting directly North Pacific albacore in the North Pacific Ocean.

¹¹ Estimates under study. Refer to Notes in Table 2-1 for further information.

¹² This data just indicates the fishery fishing for NP albacore only

¹³ Effort baseline for (2002-2004) uses license information for vessels licensed to fish and targeting NP Albacore in these years. Effort in Vessel days uses the 2004 Effort data on vessel days to estimate the average days per vessel and uses this estimate to calculate that for the 2002-2004 vessel days baseline.

¹⁴ Vessel number and effort was given for all species

Table 2 (continued). Fishing effort fishing for North Pacific albacore

CCM	Area	Fishery	2002-04 Average		2011		2012		2013		2014		2015		2016	
			No. of vess els	Vessel days	No. of vessel s	Vessel days	No. of vesse ls	Vessel days	No. of vesse ls	Vessel days	No. of vesse ls	Vessel days	No. of vesse ls	Vessel days	No. of vesse ls	Vessel days
Canada	N Pacific	ALB troll	215	8,898	161	8,556	172	5,974	183	6,465	160	4,747	164	5,197	152	5,359
	CA only	ALB troll	8	256	1	3	2	2	1	4	0	0	0	0	0	0
China	N Pacific	LL	10	1,250	10	1240	10	1280	10	1220	10	1290	10	900	10	910
Cook Islands	N Pacific	ALB troll	4	183												
	N Pacific	LL	1	2									2	22	1	68
Fiji ¹⁵	N Pacific	LL	0	0	0	0	9	230	29	920	20	663	10	88	8	170
Japan	CA only	LL Coast	296	40,988	273	42,996	266	38,977	248	37,529	246	35,362	237	37,801	229	37,308
		LL DW	633	26,851	341	12,683	320	13,818	321	13,406	305	13,305	285	11,763	256	10,419
		PL DW	141	19,839	98	13,433	95	14,646	85	12,781	84	12,147	84	12,743	81	13,923
Korea	CA only	LL DW	0	0		7,407		11,061		1,746		1,184		852		943
Philippines	CA only	Artisanal fishery (non- targeting)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chinese Taipei	N Pacific	ALB LL	25		21	1,839	21	1,423	22	2,108	22	2,348	23	2,401	24	2,259
USA	N Pacific	ALB troll		13,311		13,983		15,218		13,509		12,199		11,506		12,691
	CA only	ALB troll		789		155		*		*		7		8		0
Vanuatu	N Pacific	LL	37	3,407	24	1,248	21	760	27	1,916	25	1,904	22	2,771	18	1,382
Belize																

Italic = preliminary data

* Data in the WCPO were confidential

¹⁵ Fiji do not have any vessels targeting North Pacific Albacore in the NP Ocean.

CCM	Area	Fishery	2002-04 Average		2017		2018		2019		2020		2021		2022	
			No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days	No. of vessels	Vessel days
Canada	N Pacific	ALB troll	215	8,898	121	4,978	121	4,196	122	3,882	103	3,266				
	CA only	ALB troll	8	256	5	100	0	0	0	0	0	0				
China	N Pacific	LL	10	1,250	10	850	10	838	10	1,249	10	1,075				
Cook Islands	N Pacific	ALB troll	4	183	0	0	0	0	0	0	0	0				
	N Pacific	LL	1	2	0	0	0	0	0	0	0	0				
Fiji ¹⁶	N Pacific	LL	0	0	4	114	6	180	5	149	4	132				
Japan	CA only	LL Coast	296	40,988	233	35,566	229	34,725	225	35,163	226	36,354				
		LL DW	633	26,851	253	10,154	248	10,126	249	10,125	249	10,687				
		PL DW	141	19,839	82	12,659	80	13,236	76	12,321	75	7,781				
Korea ¹⁷	CA only	LL DW	0	0		1,999		1,347		1,209		943				
		PS	0	0					0	0						
Philippines	N Pacific	HL	0	0	0	0	0	0	0	0	0	0				
Chinese Taipei	N Pacific	ALB LL	25		25	2,567	25	2,943	25	2,338	25	2,079				
USA	N Pacific	ALB troll		13,311		12,672		11,112		11,071		8,564				
	CA only	ALB troll		789		571		123		4		28				
Vanuatu	N Pacific	LL	37	3,407	23	1,510	27	2,035	26	2,087	32	2,224				
Belize																

¹⁶ Fiji do not have any vessels targeting North Pacific Albacore in the NP Ocean.

¹⁷ Korea does not have any vessels targeting directly North Pacific albacore in the North Pacific Ocean.

Table 2-1. As requested by the NC12 (Paragraph 57) related to Paragraph 2 in CMM 2005-03, CCMs are requested to report on how to control their fishing effort fishing for North Pacific albacore by indicating, for example, limiting vessels, fishing days, licenses, or some other measures.

CCM	Area	Fisher y	Regulation of fishing effort
Canada	N Pacific	ALB troll	<p>Canada issues domestic “CT” fishing licenses for Albacore Tuna. The CT license is intended to act as a management measure to strengthen management of the domestic tuna fishery, and help ensure Canada is meeting international obligations related to effort. As of 2013, commercial license holders wanting to harvest tuna are required to hold a primary license (with Schedule II privileges) and apply for/receive a separate CT (Tuna) license. The CT license authorizes fishing of Pacific Albacore tuna in Canada’s Exclusive Economic Zone (EEZ) and on the high seas under separate license conditions. The CT license is vessel-based and must be renewed annually.</p> <p>Canadian license holders without a primary license are able to access tuna in international high seas waters through “Section 68 High Seas” licenses. The Section 68 license is intended to act as a management measure to strengthen management of the tuna fishery in the high seas, and help ensure Canada is meeting international obligations related to effort. The Section 68 licence must be renewed annually.</p>
	CA only	ALB troll	<p>Canada issues domestic “CT” fishing licenses for Albacore Tuna. The CT license is intended to act as a management measure to strengthen management of the domestic tuna fishery, and help ensure Canada is meeting international obligations related to effort. As of 2013, commercial license holders wanting to harvest tuna are required to hold a primary license (with Schedule II privileges) and apply for/receive a separate CT (Tuna) license. The CT license authorizes fishing of Pacific Albacore tuna in Canada’s Exclusive Economic Zone (EEZ) and on the high seas under separate license conditions. The CT license is vessel-based and must be renewed annually.</p> <p>Canadian license holders without a primary license are able to access tuna in international high seas waters through “Section 68 High Seas” licenses. The Section 68 license is intended to act as a management measure to strengthen management of the tuna fishery in the high seas, and help ensure Canada is meeting international obligations related to effort. The Section 68 license must be renewed annually.</p>
China	N Pacific	LL	The number of fishing vessels is limited by the license system.
Cook Islands	N Pacific	ALB troll	Not Applicable, CK has no troll vessels in the fishery
	N Pacific	LL	Limited by license.
Fiji	N Pacific	LL	Vessel Size class & capacity, Licenses and other measures specified in Offshore Fisheries Management Act 2012 & Offshore Fisheries Management Regulation 2014 and National Strategy for Fiji Fishing Vessels Operating in Areas Beyond National Jurisdiction.
Japan	CA only	LL Coast	The number of fishing vessels is limited by the license system.
		LL DW	The number of fishing vessels is limited by the license system.
		PL DW	The number of fishing vessels is limited by the license system.

Korea	CA only	LL DW	There has been no Korean flagged fishing vessel targeting for N.ALB. However, all authorized fishing vessels operating in the CA are required to report their catches including non-targeting species daily via the e-reporting system.
Philippines	-	-	Not applicable <i>Notes from 2021 Annual Report Part 1:</i> 359MT(2020) - catches for this species are mainly coming from municipal or artisanal gears (e.g. hook-and-line) and this is not a target species for these gear/s. Fishing effort for municipal or artisanal gears (e.g. hook-and-line) are difficult to quantify, as recognized by the Commission there are some fleets such as the Philippines that has some practical difficulties compiling this information. Also it would be important to note that Philippines do not target albacore (<i>Thunnus alalunga</i>), this species is mainly caught as bycatch and seasonal in nature.
Chinese Taipei	N Pacific	ALB LL	1. We have limited the number of our fishing vessels fishing for North Pacific albacore to stay below 25 since CMM 2005-03 was implemented. The vessel number is controlled when we issue the fishing permit every year. 2. For other fishing vessels that are not allowed to fishing for North Pacific albacore, their bycatches of this albacore would be monitored to stay below certain ratio
USA	N Pacific	ALB troll	The United States has a single fleet that fishes for North Pacific albacore in the Convention Area: the albacore troll fleet is based out of the U.S. West Coast. The albacore troll fleet is not currently subject to effort or catch controls, but permitting, VMS, and reporting (through vessel logbooks) requirements enable the United States to monitor the fishery, including levels of participation, fishing effort and catches. The United States will continue to monitor fishing effort and implement any controls needed to comply with paragraph 2 of the CMM, as well as with relevant decisions adopted in other RFMOs (IATTC).
	CA only	ALB troll	The United States has a single fleet that fishes for North Pacific albacore in the Convention Area: the albacore troll fleet is based out of the U.S. West Coast. The albacore troll fleet is not currently subject to effort or catch controls, but permitting, VMS, and reporting (through vessel logbooks) requirements enable the United States to monitor the fishery, including levels of participation, fishing effort and catches. The United States will continue to monitor fishing effort and implement any controls needed to comply with paragraph 2 of the CMM, as well as with relevant decisions adopted in other RFMOs (IATTC).
Vanuatu	N Pacific	ALB LL	Vanuatu has reviewed its baseline to use information on vessels licensing data for the years 2002-2004 for vessel who fished for North Pacific Albacore. Information on Vessel days is estimated using the 2004 vessel days average (2004 as the year with the most data from the 3 baseline years) and this estimate is used to calculate the average Vessel days for the effort baseline. With this revision Vanuatu is in compliant with the measure and will continue to monitor fishing effort and implement any controls needed to comply with paragraph 2 of the CMM.
Belize			
FSM			
Marshall			

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WORK PROGRAMME FOR THE NORTHERN COMMITTEE

Work areas	Objectives	annual tasks		
	2022–2024	2022	2023	2024
1. Northern stocks				
a. Monitor status; consider management action	<p>Review status and take action as needed for:</p> <p><u>North Pacific albacore</u></p> <p>Tasks</p> <p>(A) Review members' reports on their implementation of CMM 2019-03.</p> <p>(B) Implement the Interim 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>Based on MSE results, consider retention or modification of LRP and consider adoption of TRP to complete Task (B)(2).</p> <p>Recommend any necessary changes to CMM. (Task (B) (3)).</p>	<p>Review the compiled members' reports and identify and rectify shortcomings.</p> <p>Further development of harvest strategy including establishment of harvest control rule and threshold reference point to complete Task (B)(2).</p> <p>Obtain the new assessment results from ISC and recommend any necessary</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.		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 probabilities of initial and second rebuilding targets 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>(C) Develop CDS</p>	<p>Review the compiled members’ reports and identify and rectify shortcomings.</p> <p>Review the 2022 stock assessment results and other work results from the ISC and recommend any necessary changes to CMM. (Task (B) (3)).</p> <p>Work in the JWG to further develop harvest strategy through identification of performance criteria to evaluate candidate LRPs, TRPs, and HCRs.</p> <p>Explore means of supporting the MSE and its oversight by the JWG, including funding and in-kind support.</p> <p>Develop CDS based on the inputs from members and recommendations of the JWG, including a draft CMM.</p>	<p>Review the compiled members’ reports and identify and rectify shortcomings.</p> <p>Obtain work results from ISC and recommend any necessary changes to CMM on Pacific bluefin tuna. Work in the JWG to further develop harvest strategy.</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>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><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>	Consider and recommend appropriate TRP and associated HCR, and develop a draft CMM.	<p>Consider the new assessment results from ISC</p> <p>Consider and recommend appropriate TRP and associated HCR, and develop a draft CMM.</p>	
b. Data	<p>Achieve timely submission of complete data needed for assessments, formulation of measures, and review of Commission decisions.</p> <p>Consider systems to validate catch data</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 bluefin tuna, North Pacific albacore, North Pacific striped marlin, and swordfish data from all CCMs and make available to ISC.</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 bluefin tuna, North Pacific albacore, North Pacific striped marlin and swordfish data from all CCMs and make available to ISC.</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 bluefin tuna, North Pacific albacore, North Pacific striped marlin and swordfish data from all CCMs and make available to ISC.</p>
c. Scientific support	Provide support for scientific studies.	Encourage voluntary contribution for NC's list of priority scientific projects, including close-kin analysis.		
2. Non-northern				

stocks	<u>Striped marlin</u>	Consider the new assessment results from ISC 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>	Consider the new assessment results from ISC including potential reference points taking into account discussions at SC	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. With input from the SC, evaluate the design of tori lines for small longline vessels in North Pacific and consider improvements as needed.	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.

