North Pacific Fisheries Commission

Yearbook 2024

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FOREWORD

As the Chair of the North Pacific Fisheries Commission (NPFC), I am honored to deliver the 2024 Yearbook. This Yearbook covers the events and activities from July 2024 to March 2025 (i.e., meetings after COM08 and up to and including COM09).

Firstly, I would like to celebrate that 2025 marks the 10th anniversary of the NPFC. Since 2015, when the Convention came into force and the NPFC was established, the Commission has adopted various Conservation and Management Measures (CMMs) and promoted their effective implementation and compliance in order to achieve the objective of the Convention, guided by the best scientific information available, as well as relevant international rules and standards. At the same time, I recognize that there is still much work to be done and many matters to be further discussed. For example, we need to conduct and improve stock assessment work further, consider the impacts of climate change, and better understand the implications of the BBNJ Agreement for the NPFC's work. Nevertheless, I firmly believe that, through the continued cooperation of its Members, the NPFC can address these matters effectively and appropriately.

During this operational year, through extensive discussions among nine Members, the NPFC adopted and updated several CMMs aimed at improving the status of fisheries resources, enhancing the collection of clear and reliable scientific data, including bycatch data, and protecting vulnerable marine ecosystems in the Convention Area. In particular, the NPFC adopted a CMM on the Transshipment Observer Program in the Convention Area. I am confident that this measure will enable its Members to understand the current situation of at-sea transshipment, collect additional fisheries-related data, and monitor the implementation of CMMs. In addition, the NPFC signed Memoranda of Understanding with the Western and Central Pacific Fisheries Commission and the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean. These arrangements are expected to strengthen practical cooperation and information exchange in scientific and compliance-related areas.

Finally, I want to express my heartfelt gratitude to all Members, invited experts, and observes for their invaluable contribution to ensure the long-term conservation and sustainable use of the fisheries resources in the Convention Area while protecting the marine ecosystems of the North Pacific Ocean in which these resources occur.

Mr. Shingo OTA
Chair
North Pacific Fisheries Commission

ACKNOWLEDGEMENT

Like the Chair, I also would like to congratulate our members on this publication of the 2024 NPFC Yearbook which incorporates the meetings held after COM08 and up to and including COM09. This record commemorates the Commission's performance drawing from the commitment and contribution from Members.

The Commission has continued to combine virtual participation with in-person meetings to allow for effective engagement with Members.

There are many people who I wish to appreciate for their hard work in preparation for the meetings. They are the Chair of the Commission, and Chairs of the Scientific Committee, Technical and Compliance Committee, Finance and Administration Committee, Management Strategy Evaluation Small Working Group for Pacific Saury, Small Scientific Committees, Technical Working Group, and intersessional working groups.

My thanks also go to our Rapporteur and Secretariat staff who were enthusiastic, dedicated, and wonderful to work with during the course of Commission meetings and in assisting the Members in carrying out the Convention's objectives.

This Yearbook was edited by Mr. Shinnosuke KATO and Ms. Yume KAWAI, and I very much appreciate their focus. We welcome comments or suggestions from readers on this Yearbook to improve the quality of this publication in the future.

Dr. Robert Day
Executive Secretary
North Pacific Fisheries Commission

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INTRODUCTION

The North Pacific Fisheries Commission (NPFC) is an inter-governmental organization established by the Convention on the Conservation and Management of High Seas Fisheries Resources in the North Pacific Ocean. The objective of the Convention is to ensure the long-term conservation and sustainable use of the fisheries resources in the Convention Area while protecting the marine ecosystems of the North Pacific Ocean in which these resources occur. The Convention was adopted on 24th February 2012 and came into force 180 days after receipt of the 4th ratification on 19th July 2015.

The task of the Commission is to achieve its objective by establishing management regimes to ensure the conservation and sustainable use of the fisheries resources of the North Pacific Ocean and its sensitive marine ecosystems. At present, there are nine (9) Members of the NPFC, namely: Canada, China, the European Union (EU), Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and the Republic of Vanuatu. For this period there were no Cooperating Non-contracting Parties (CNCP)in NPFC. The NPFC Secretariat is located in Tokyo, Japan. Dr. Robert Day is the Executive Secretary and has been leading the Secretariat since November 2022.

Fisheries resources covered by the Convention include all the fish, mollusks, crustaceans and other marine species caught by fishing vessels within the Convention Area, excluding:

(i) Sedentary species insofar as they are subject to the sovereign rights of coastal States and indicator species of vulnerable marine ecosystems as listed in, or adopted pursuant to the NPFC Convention, including at the moment four families of cold-water corals;
(ii) Catadromous species;
(iii) Marine mammals, marine reptiles and seabirds; and
(iv) Other marine species already covered by pre-existing international fisheries management instruments within the area of competence of such instruments.

Currently the fish species targeted by the NPFC Members include bottom fish stocks and pelagic fish stocks as follows:

- **FISHERY FOR BOTTOM FISH STOCKS:**

In the Northwestern Pacific Ocean, bottom trawl fisheries, bottom gillnet fisheries and bottom longline fisheries have been conducted over the Emperor seamounts by Japan, Korea and Russia. The primary target species of the bottom trawl fisheries have been North Pacific Armorhead (*Pentaceros wheeleri*), and splendid alfonsino (*Beryx splendens*), and the primary target species of the bottom gillnet fisheries have been splendid alfonsino, oreo (*Allocyttus verrucosus*) and mirror dory (*Zenopsis nebulosa*).

In the Northeastern Pacific Ocean, the seamount long-line fishery began in the 1970's. Four seamount aggregations (Eickelberg Seamounts, Warwick Seamount, Cobb Seamounts, and Brown Bear Seamounts) have been fished by Canada, via longline hook and longline trap gear. The primary target species of both the above fishing gears has been sablefish (*Anoplopoma fimbria*).

- **FISHERY FOR PELAGIC FISH STOCKS:**

Pacific saury (*Cololabis saira*) is one of the major target species in the Convention Area and has been harvested by China, Japan, Korea, Russia, Chinese Taipei and Vanuatu. Most fleets mainly use stick-held dip nets or lift nets (a similar fishing method which uses fishing lamps) to catch Pacific saury. While Japanese and Russian vessels operate mainly within their EEZs, Chinese, Korean, Chinese Taipei and Vanuatu vessels operate mainly in the high seas of the North Pacific. Stock assessment of this species provides the basis for establishing conservation and management measures for the sustainability of the fishery.

A Chub mackerel (*Scomber japonicus*) fishery is also active in the NPFC Convention Area in the Northwestern Pacific Ocean. Similar with Pacific saury, the stock assessment for chub mackerel also determines if current conservation and management measures are effective to continue the sustainable use of these marine resources.

Neon flying squid (*Ommastrephes bartramii*) and Japanese flying squid (*Todarodes pacificus*) are traditionally harvested by squid jigging vessels within the Convention Area.

The Japanese sardine (*Sardinops melanostictus*) fishery has been the largest fishery by volume over the last five years, with increasing catch both in the Member's waters (Japan and Russia) and in the Convention Area (China).

- **NPFC PERSONNEL:**

The personnel of the Secretariat and the Chairman are representatives of the multinational and multicultural nature of the Commission. In this period, the Commission was led by the Chair, Mr. Shingo OTA. The Secretariat was headed by the Executive Secretary, Dr. Robert Day; with the Science Manager, Dr. Aleksandr Zavolokin; the Compliance Manager, Ms. Judy Dwyer; and supported by the Executive Assistant, Ms. Yuko Yoshimura-Takamiya; and the Data Coordinator, Mr. Sungkuk Kang. The Secretariat also engaged temporary consultants for a limited period of time to assist the Commission in finance, compliance and science-related activities, and accepted a secondee to bring skills and experience to support the Secretariat and two interns to provide early-career professionals of Members opportunity to gain experience and knowledge in the operations of the Commission.

- **PERIOD OF COVERAGE:**

This publication picks up immediately after the last reported activity of the previous Yearbook (after COM08) and covers key activities and Commission meetings held from the 9th Technical Working Group on Chub Mackerel Stock Assessment Meeting in July 2024 up to, and including, the 9th Commission Meeting in March 2025.

In its efforts to achieve the objective of the Convention, the Commission:

a. held formal Scientific Committee meetings on fisheries resources covered by the Convention, vulnerable marine ecosystems, and stock assessments, as well as intersessional meetings of the SC and its subsidiary bodies;
b. held several small working group meetings on compliance matters;
c. adopted a new CMM (Transshipment Observer Program);
d. updated six CMMs (Bottom Fisheries in the Northwestern Pacific Ocean and in the Northeastern Pacific Ocean, Pacific Saury, Chub Mackerel, Vessel Monitoring System, and Transhipments); and
e. agreed to continue working on two new CMMs (Port State Measures, and Standardization for Data Collection).

In addition, as an observer, the Secretariat participated in a number of international fisheries meetings, including PICES Annual meetings, 10th RSN Meeting, 36th FAO COFI session, DSF Project Steering Committee meeting and intersessional meetings, 31st NPAFC Annual Meeting, 12th SPRFMO SC Meeting, the North Pacific Coast Guard Forum, and the Pan Pacific Fisheries Compliance Network regular meetings. The Secretariat also received a visit from the IMCS Network to review several projects.

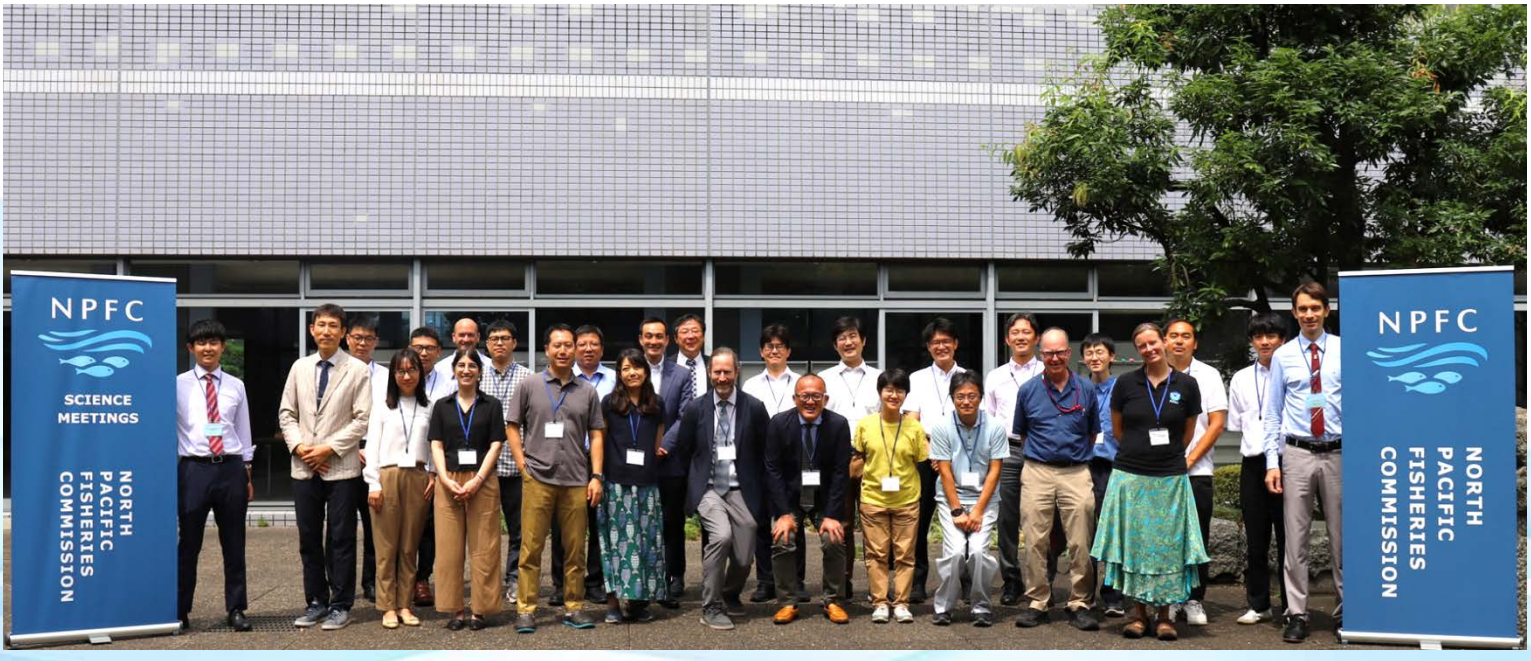
The following pages provide the final approved reports of meetings of the North Pacific Fisheries Commission and its subsidiary bodies. They are provided in chronological order for meetings after COM08 up to and including COM09.

9th Meeting of the Technical Working Group on Chub Mackerel Stock Assessment

17-20 July 2024

Yokohama, Japan (Hybrid)

Meeting Report



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MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 9th Meeting of the Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA) was held in a hybrid format, with participants attending in-person in Yokohama, Japan, or online via WebEx on 17–20 July 2024. The meeting was attended by Members from Canada, China, the European Union (EU), Japan, the Russian Federation, and the United States of America. The Ocean Foundation attended as an observer. An invited expert, Dr. Joel Rice, participated in the meeting.

2. The meeting was opened by Dr. Kazuhiro Oshima (Japan), the TWG CMSA Chair.

3. Dr. Hiroshi Minami, Deputy Director, Fisheries Stock Assessment Center, Fisheries Resources Institute of Japan welcomed the participants to Yokohama. He thanked the participants for their hard work to prepare for the important task of conducting the NPFC's first chub mackerel assessment, which will inform the appropriate utilization and management of the chub mackerel stock in the future. Dr. Minami wished the participants a successful meeting and a pleasant stay in Yokohama.

4. The Science Manager, Dr. Aleksandr Zavolokin, outlined the procedures for the meeting.

5. Mr. Alex Meyer was selected as rapporteur.

Agenda Item 2. Adoption of Agenda

6. The agenda was adopted (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Overview of the recommendations and outcomes of previous NPFC meetings relevant to chub mackerel

3.1 TWG CMSA08

7. The Chair provided an overview of the outcomes and recommendations of the 8th TWG CMSA meeting.

3.2 Intersessional meetings of TWG CMSA

8. The Chair provided an overview of the 1st and 2nd intersessional meetings of the TWG CMSA in 2024, which were held in March and April 2024 (NPFC-2024-TWG CMSA08-RP01 & 02).

9. The Science Manager shared outcomes from the 8th Commission meeting (COM08) and subsequent developments relevant to chub mackerel. The Commission agreed to work intersessionally to continue to update the matrix with the Performance Review Panel recommendations, priorities and timeframes, responsible bodies, activities undertaken to date, and status. The TWG CMSA is requested to provide further input on the status. In relation to the Resolution on Climate Change, since COM08, the FAO has agreed to fund a consultancy on climate change with the NPFC and to appoint Dr. Joel Rice as the consultant. In addition, COM08 revised the Conservation and Management Measure (CMM) for Chub Mackerel. Revisions included the addition of a paragraph stipulating provisional measures, including an annual total allowable catch (TAC) of chub mackerel in the Convention Area, to be taken until the chub mackerel stock assessment is conducted and the CMM is revised accordingly.

Agenda Item 4. Members' fishery status and research activities

10. China presented a review of its chub mackerel fishery and research activities (NPFC-2024-TWG CMSA09-IP03). In 2023, China operated about 95 purse seine and trawl vessels in the Convention Area. The estimated catch in 2023 of chub mackerel and blue mackerel was about 48,850 MT. The distribution of chub mackerel in 2023 was similar to that in 2022 but further to the northeast. The average length of caught individuals was 231 mm, slightly larger than in 2022 (221 mm). The main ages at catch in 2023 were from 1 to 3, similar to 2022. China collects and analyzes fishing logbooks every year, collects samples on fishing vessels and in ports, monitors the monthly ratio of chub mackerel and blue mackerel in catch, and conducts monitoring of biological features. Since 2023, China has increased sample collection for pelagic trawl nets in the North Pacific.

11. Japan presented a review of the recent fishery and stock status of chub mackerel (NPFC-2024-TWG CMSA09-IP04). Japan's catch comes from large-scale purse seine vessels, small-scale purse seine vessels, set nets, and dip nets and other gears. The majority of the catch is from large-scale purse seine vessels. In the fishing year 2023 (FY2023), the catch has been approximately 54,800 MT up to February 2024, which is very low compared to past years. There is usually substantial catch between November and spring months, with catch in

November tending to be high, but that has not been the case in FY2023. Japan's 2023 summer surface trawl survey showed broad distribution of age-0 and age-1 fish offshore. Japan's 2023 autumn surface trawl survey was limited but showed that the distribution of the chub mackerel was offshore. The egg survey shows that the main spawning ground is near the Izu Islands and coastal Japan. Preliminary nominal values of the egg abundance index from 2023 and 2024 showed consecutive declines in egg abundance, suggesting low spawning stock biomass or low levels of reproductive events.

12. Russia provided a brief update on its chub mackerel fishery and research activities. In 2023, the total catch of chub mackerel in the Convention Area was less than 1 MT, landed as part of its traditional species-integrated summer survey. Russia conducted its traditional hydroacoustic and oceanographic survey from August to September, but it was limited to Russian waters and did not take overlap with the Convention Area. In 2024, Russia again conducted its summer survey and the catch of chub mackerel was even lower than in 2023. The catch from the Russian fishery in 2024, as of July, is 960 MT.

Agenda Item 5. Review of results of stock assessment using State-space stock assessment model (SAM)

5.1 Review of Stock Assessment Protocol

13. The TWG CMSA reviewed the Stock Assessment Protocol and determined that no revisions are currently needed.

5.2 Review of data used for stock assessment

14. Japan presented a description of the data that the TWG CMSA agreed to use for the base case stock assessment of chub mackerel in the northwestern Pacific Ocean (NPFC-2024-TWG CMSA09-WP01). The data consist of catch-at-age, weight-at-age, and maturity-at-age since 1970 with different lengths of temporal data from three Members: China, Japan, and Russia.

15. Japan presented a description of the input data that the TWG CMSA agreed to use for the sensitivity analyses of the stock assessment of chub mackerel in the northwestern Pacific Ocean (NPFC-2024-TWG CMSA09-WP02). The data consist of catch-at-age and maturity-at-age since 1970. The sensitivity analyses contain three alternative catch-at-age datasets (1. removal of Chinese catch-at-age from the calendar year (CY) 2015, 2. use of Chinese catch-at-length from CY2016, 3. use of Japanese catch-at-length) and two alternative maturity-at-age datasets (1. mean of Japanese and annual mean of Chinese maturity-at-age, 2. mean of Japanese and seasonal mean of Chinese maturity-at-age).

16. China presented a standardization of catch per unit effort (CPUE) data for chub mackerel

caught by the China's lighting purse seine fishery from 2014 to 2022 using a generalized additive model (GAM) (NPFC-2024-TWG CMSA09-WP13 (Rev. 1)). Four groups of independent variables were considered in the CPUE standardization: spatial variables (latitude and longitude), temporal variables (year and month), fishery variables (vessel length) and environmental variables (sea surface temperature (SST) and chlorophyll-a concentration (Chla)). China recommended using the standardized CPUE derived from GAM as an input for the chub mackerel stock assessment.

17. The TWG CMSA agreed to use China's standardized CPUE derived from GAM as an input for the chub mackerel stock assessment.

18. Japan presented a revised working paper on standardized abundance indices for age-0 and age-1 chub mackerel fish from Japan's Northwest Pacific autumn surveys up to 2023 produced using the Vector Autoregressive Spatio-Temporal Model (VAST) model (NPFC-2024-TWG CMSA09-WP06). Japan's standardized abundance indices for age-0 and age-1 chub mackerel from Japan's Northwest Pacific autumn surveys were first presented at TWG CMSA08 and the TWG CMSA agreed to use them as inputs for the stock assessment. At the suggestion of the TWG CMSA, Japan revised these standardized abundance indices after TWG CMSA08 by using slightly revised model configurations for the 1-year-old fish analysis. The revision produced little change in the results.

19. The TWG CMSA agreed to use Japan's revised standardized abundance indices for age-1 fish as inputs for the stock assessment.

20. Japan presented an updated standardization of egg abundances from monthly egg density data obtained by research surveys for the Pacific stock of chub mackerel using the VAST model (NPFC-2024-TWG CMSA09-WP07). These abundance indices were presented at TWG CMSA08 and the TWG CMSA agreed to use Japan's standardized chub mackerel egg abundance index, updated with the July 2023 data, as an input for the stock assessment. As recommended by the TWG CMSA, Japan has since updated the index with the July 2023 data.

21. The TWG CMSA agreed to use Japan's updated standardized chub mackerel egg abundance index as an input for the stock assessment.

22. Russia presented its standardization of CPUE data for chub mackerel caught by its trawl fishery from 2016 to 2023 using GAM (NPFC-2024-TWG CMSA09-WP11). Russia recommended using the standardized CPUE derived from GAM as an input for the stock assessment.

23. The TWG CMSA agreed to use Russia's standardized CPUE derived from GAM in a sensitivity analysis for the chub mackerel stock assessment.

5.3 Confirmation of setting and specification of SAM

24. The TWG CMSA reviewed the setting and specification of SAM as part of its review of the initial stock assessment results under agenda item 5.4 below.

5.4 Review of stock assessment results

5.4.1 Stock biomass, recruitment, spawning stock biomass, fishing mortalities, etc.

5.4.2 Model diagnostics and sensitivity analysis

25. Japan presented an initial base case stock assessment for chub mackerel in the Northwest Pacific Ocean in 2024 using a state-space age-structured (assessment) model (SAM) (NPFC-2024-TWG CMSA09-WP03 (Rev. 1)). Estimated total biomass and spawning stock biomass (SSB) declined from high levels in the 1970s to low levels in the 1980s, remained at low levels in the 1990s and early 2000s, and increased in the late 2000s. A strong year-class in 2013 led to a significant increase in total biomass and SSB, which peaked in 2017 and declined slightly until 2022, with recent abundance levels estimated to be lower than those of the 1970s. Model diagnostics showed that a few parameters had strong correlations and large uncertainties with other parameters, while the retrospective analysis showed a moderately large positive bias in total biomass, so there is room for further improvement on these issues.

26. Japan presented analyses of the sensitivity of the chub mackerel stock assessment in 2024 to observation and model uncertainty in the Northwest Pacific Ocean (NPFC-2024-TWG CMSA09-WP04). The sensitivity analysis scenarios with data up to 2022 or model settings without considering additional process errors showed results that were not significantly different from the base case, indicating that estimates by the base case are relatively robust to these uncertainties. However, scenarios using Japan's indices up to the latest available year, 2023, yielded results that differed significantly from the base case, representing the most pessimistic scenario with recent SSB being low and fishing pressure being high. This was primarily due to the low values of Japan's indices in 2023. Comparative analysis of predictive skill between the base case and this sensitivity scenario demonstrated higher accuracy in short-term forecasting for the sensitivity scenario. Therefore, Japan suggested that it is crucial to consider the results of the sensitivity scenario using the latest information from Japan's index thoroughly when considering recent stock status, conducting risk assessments from future projections, and making scientific management recommendations.

27. The TWG CMSA discussed a number of potential concerns regarding the SAM stock assessment model configuration as it was initially presented by Japan. These concerns included

the fit of the models to some indices, the practice of fixing process error for ages 1+, estimation of a power parameter within the CPUE observation model, retrospective patterns in the predicted indices, and the stock-recruitment relationship. The TWG CMSA also discussed some additional model diagnostics and plots that could be added to the stock assessment analyses. The TWG CMSA explored ways to address these issues, including additional model runs using different stock-recruitment relationships and modification of SAM to estimate age-specific processes errors of age 1 and older fish. Japan conducted additional runs and modifications of the model, expanded diagnostics, and presented the results for the TWG CMSA's review. Based on the results, the draft setting and specification of SAM was prepared (Annex D), to be finalized in conjunction with the finalization of the stock assessment report.

28. The TWG CMSA discussed and agreed on which stock assessment model scenarios to highlight in the executive summary of the stock assessment, including the selection of 4 models: 1) Estimate process error for only age 0 (recruitment) ; 2) Estimate process error for all age groups; 3) Estimate process error for only age 0 and use Japanese indices up to FY2023; and 4) Estimate process error for all age groups and use Japanese indices up to FY2023. Model 2) was selected as the base case. All models may still be considered and discussed in the final stock assessment report and future meetings.

29. The TWG CMSA discussed which year to set as the terminal year for the base case stock assessment. Japan suggested that its abundance indices up to 2023 should also be included as these are the latest available data. China noted that the inclusion of these indices involves large uncertainty related to assumptions about the biological parameters and expressed concern about their inclusion in the base case stock assessment. Therefore, the TWG CMSA maintained its previous decision, made at TWG CMSA08 and reaffirmed in the intersessional meetings since then, to set 2022 as the terminal year in the base case. The TWG CMSA agreed to include Japan's abundance indices up to 2023 as a sensitivity analysis.

30. The TWG CMSA noted the value of including the most up-to-date data in stock assessments and agreed that although it did not include the most recent past year's abundance indices in the base case for the stock assessment (2023), this did not preclude it from doing so in future stock assessments. The TWG CMSA also held preliminary discussions on the possibility of adjusting the timing of its meetings to later in the calendar year, for example holding the data preparatory meeting in summer and the stock assessment meeting immediately prior to the SC meeting in December, so as to be able to more easily incorporate data from the most recent past year into stock assessments. The TWG CMSA agreed to discuss this matter further intersessionally.

5.5 Draft summary of stock assessment results

31. The TWG CMSA drafted a summary of the stock assessment results. See the executive summary of the chub mackerel stock assessment report in Annex F.

32. China presented a stock assessment that it conducted for research using the age-structured assessment program (ASAP) based on the latest aggregated dataset and the agreed scenarios for chub mackerel in the North Pacific Ocean (NPFC-2024-TWG CMSA09-WP12 (Rev. 1)). A total of 12 scenarios were run in ASAP, including two base cases of different natural mortality and 10 other sensitivity cases considering various CPUE, maturity and catch-at-age data. The results indicated that there is no significant difference of abundance, SSB and fishing mortality estimates among all scenarios. The trend of SSB was similar with the results from SAM, which was high before 1980, decreased to a very low value between 1980 and 2010, then recovered and stayed at high values in the recent decade. Preliminary projections were also conducted, providing estimates of catch and SSB in the next ten years under different fishing mortality and TAC.

33. The TWG CMSA encouraged China to continue to develop the stock assessment model and suggested the following as potential future work:
    (a) Conduct retrospective analyses for recruitment in the model.
    (b) Check whether data from the correct time-lag has been used for calculating recruitment from SSB.
    (c) Create a residual plot of catch-at-age data.

Agenda Item 6. Future projections and biological reference points

6.1 Confirmation of projection methods and scenarios

34. The TWG CMSA reviewed the projection methods and scenarios as part of its review of the projection results under agenda item 6.2 below.

6.2 Review of projection results

35. Japan presented methods for calculating various commonly used biological reference points and stochastic future projections and the results based on the parameters estimated in the chub mackerel stock assessment (NPFC-2024-TWG CMSA09-WP05). Japan also evaluated the historical spawning potential of the stock by calculating unexploited spawning biomass (SSB0) per recruit (SPR0) based on annually changing weight and maturity. The calculated SPR0 shows that the spawning potential of this stock has significantly decreased to half the historical average during the most recent 7 years. The varying and decreasing SPR0 results in varying and decreasing estimates of SSB0 and SSB achieving maximum sustainable yield (SSB_{MSY}). Because the stock-recruitment relationship estimated in the stock assessment model indicates very weak density dependence in the ranges historically observed with low steepness, the

estimated SSB0 and SSB_{MSY} were extreme extrapolations, which may have resulted in these estimates being somewhat uncertain and unrealistic.

36. Japan presented the results of additional calculations of commonly used biological reference points and future projections based on the TWG CMSA's suggestions. Based on the results, the draft options for the basic specifications for conducting future projections for chub mackerel were prepared (Annex E), to be finalized in conjunction with the finalization of the stock assessment report.

6.3 Draft of management advice based on the results of projection and biological reference points

37. The chub mackerel stock in the Northwest Pacific Ocean has experienced large changes in biological parameters over the time period of the model. The main temporal changes are a recent decrease in maturity at age, along with a recent decrease in the weight at age, both of which were observed to change over the model time period to cause temporal changes of biological reference points. Maximum sustainable yield (MSY)-based reference points are highly variable over the time series of the assessment because the weight- and maturity- at age of chub mackerel has varied widely (Annex F, Figures 3 and 4), which impacts the productivity of the stock. Unfished spawning biomass per recruit (SPR0) represents the theoretical equilibrium productivity per fish assuming no fishing. SPR0 has varied remarkably over time (Annex F, Figure 5).

38. In addition, as there is little recruitment compensation in the stock-recruitment relationship within the range of historically observed SSB and recruitment (Annex F, Fig. 8), estimates of biomass-based MSY reference points are extreme explorations that are highly sensitive to model configuration.

39. Because of the above reasons, commonly used reference points such as MSY-related or SPR-related reference points vary over time and are uncertain, and they are potentially misleading with respect to stock status. For example, the MSY based reference points have varied by the assumption of biological parameters to be used (Annex F, Table 1). The exploitation rates corresponding to the MSY was 10% when assuming biological parameters during the whole historical period, but it dropped to 5% when using the most recent 7 years biological parameters.

40. As such, at this time, the TWG CMSA does not recommend the use of MSY-based reference points for management advice. Instead, the TWG CMSA provides information of current estimates of chub mackerel SSB and F (average 2020-2022) relative to the minimum, 25th, 50th, 75th and maximum value of the SSB and F values over the entire time period (1970-2022; Annex F, Table 2). Values relating to the most recent time period (2016-2022) are also shown

in order to describe the current stock relative to recent conditions.

41. The abundance estimated by the Japanese egg survey and the CPUEs from the Japanese dipnet and Russian trawl decreased over recent years, showing that they were simultaneously reduced to about half the level of recent years in 2023. The sensitivity run of the stock assessment model including Japanese CPUE for 2023 shows substantial decline in biomass and SSB in FY2022 and further in FY2023 and higher fishing mortality in the last few years (Annex F, Figure 7).

42. Given the uncertainty in biological parameters in future, which have a large impact on the projection results, the TWG CMSA considers it is not appropriate to provide long-term harvesting recommendations at this time. A short-term (towards 2028) projection was undertaken to assess the effects of varying catch levels, ranging from 50 to 400 thousand tons, based on the most recent seven years' biological data (Annex F, Figure 9) and the entire time series of biological data (Annex F, Figure 10) for management considerations. Projections based on the most recent seven years' biological data showed that Fcur leads to future constant decline of SSB and it is necessary to reduce current fishing mortality (Annex F, Table 3).

Agenda Item 7. Stock assessment report

7.1 Review of draft executive summary

7.1.1 Stock status

7.1.2 Management advice

7.1.3 Others

43. The TWG CMSA drafted the executive summary of the chub mackerel stock assessment report (Annex F).

7.2 Review of draft stock assessment report

7.3 Work assignments to finalize the report towards SC09 meeting

44. The TWG CMSA agreed to work intersessionally to finalize the stock assessment report and submit it to the SC09 meeting. See Annex G for a detailed timeline.

Agenda Item 8. Data collection and management

8.1 Data provision templates

45. The TWG CMSA reviewed the data provision templates from SC08 (NPFC-2023-SC08-IP13 (Rev 1)). The TWG CMSA had no specific feedback about the templates. The TWG CMSA encouraged Members to continue to review and test the templates and provide their feedback by the 9th Scientific Committee meeting (SC09). The TWG CMSA noted that upon endorsement by SC09 these data provision templates will be used by SC's subsidiary groups for data sharing.

46. The TWG CMSA suggested that the templates could eventually be used not only for standardized data reporting, but also for the establishment of a database. The TWG CMSA noted that when establishing and managing such a database, consideration should be given to ensuring appropriate data access restrictions.

8.2 Data inventory

47. The Secretariat presented a data inventory policy and a data inventory table summarizing chub mackerel data submitted by Members (NPFC-2024-TWG CMSA09-WP10).

48. The TWG CMSA noted the approach being taken by the Secretariat to develop the data inventory and had no specific feedback.

8.3 Update on GitHub repository and user manual

49. The Data Coordinator, Mr. Sungkuk Kang, provided an update on the GitHub repository and user manual (NPFC-2024-TWG CMSA09-IP02). He explained that the Secretariat officially submitted the application for the GitHub Nonprofit Plan on 5 February 2024. However, the Secretariat was informed that due to a high volume of tickets, the approval process may be delayed. The Secretariat will continue to try to get the approval from GitHub for the use of the Nonprofit Team Plan. As a contingency plan, the Secretariat has established a GitHub Free Plan to be used until then. The Secretariat has also developed a user manual that is available on the NPFC website and can be continuously enhanced based on feedback from Members.

8.4 Observer program

50. The Science Manager informed the TWG CMSA that the Commission requested that the SC provide guidance to the Technical and Compliance Committee (TCC) on what level of observer coverage would be needed on fishing vessels and what kinds of data would need to be collected to achieve the scientific objectives of a regional observer program (ROP). Following this, the SC Chair has requested the SC's subsidiary bodies, including the TWG CMSA, to consider the scientific objectives, data needs, and level of observer coverage, and to come to SC09 prepared to discuss these. In addition, the TCC Chair has asked the SC and its subsidiary bodies to answer the following questions: 1. Are there different needs for the different fisheries regarding data collection? 2. What new data would the SC prioritize/need from a ROP? 3. What new data would be nice to have (i.e. not needed/priority)? 4. Whether this data could be collected through electronic monitoring (EM)? 5. Whether the observer needs to be a scientist, or can data be collected by a non-scientist?

51. The Science Manager reminded the TWG CMSA that some Members have noted that an ROP

could be supplemented with national observer programs and presented a summary table showing the existence and type of Members' national observer programs in the Convention Area and adjacent exclusive economic zones (EEZs) (NPFC-2024-SC09-WP02).

52. The TWG CMSA agreed that to further improve the chub mackerel stock assessment, it is important to collect more detailed catch data, particularly more detailed age-specific biological data, throughout the range of the distribution of this species, as well as information for distinguishing between chub mackerel and blue mackerel in catch. Such data could not be collected through e-monitoring. The TWG CMSA also noted that if chub mackerel are being transshipped, it is possible that they may not be subject to Members' port sampling schemes and biological data are therefore not being collected from them.

53. The TWG CMSA noted that in order to provide advice on the level of observer coverage, it would need to have a better understanding of each Member's national observer programs and sampling schemes. The Science Manager informed the TWG CMSA that it has already compiled some information describing Members' national observer programs and sampling schemes (NPFC-2024-SC09-WP02) and suggested that Members provide their feedback to the Secretariat on what kind of additional information they would like to know.

Agenda Item 9. Review of the Work Plan of the TWG CMSA

54. The TWG CMSA reviewed and updated the Work Plan of the TWG CMSA (NPFC-2024-TWG CMSA09-WP08 (Rev. 2)).

55. The TWG CMSA reviewed the NPFC Performance Review recommendations that concern chub mackerel and the status of responses (NPFC-2024-SC09-WP01) and agreed with the updated responses drafted by the Chair and Secretariat.

Agenda Item 10. Other matters

10.1 Timeline and intersessional activities before TWG CMSA10

56. The TWG CMSA drafted a timeline of tasks leading up to TWG CMSA10 (Annex G).

10.2 Species summary

57. The TWG CMSA reviewed and updated the species summary for chub mackerel (NPFC-2024-TWG CMSA09-WP09 (Rev. 2)). The TWG CMSA recommended that the SC adopt the updated species summary (Annex H).

10.3 Invited expert

58. The TWG CMSA expressed its appreciation for the valuable support of the invited expert, Dr.

Joel Rice. The TWG CMSA recommended that Dr. Rice be invited to the meetings of the TWG CMSA in 2025 and assist the TWG CMSA in drafting the stock assessment report intersessionally.

10.4 Election of Chair and vice-Chair

59. The TWG CMSA re-elected Dr. Kazuhiro Oshima to serve as its Chair for another two-year term.

60. The TWG CMSA re-elected Dr. Qiuyun Ma to serve as its Vice-Chair for another two-year term.

10.5 Other issues

61. The consultant, Dr. Jihwan Kim, presented the results of a study on the effects of Kuroshio Current variability and Pacific Decadal Oscillation (PDO) on the recent decline in chub mackerel catch in the Northwestern Pacific in the 2020s (NPFC-2024-TWG CMSA09-IP01). Results indicate that variations in the path of the Kuroshio Current around southern Japan and its extension significantly correlate with chub mackerel catch fluctuations, rather than upper-ocean temperature variability in the feeding and nursery grounds along the east coast of Japan. Additionally, the results underscore the influence of PDO-driven ocean processes on Kuroshio Meandering and its extension, which may establish biologically adverse conditions affecting spawning success and consequently, catch and abundance.

Agenda Item 11. Recommendations to the Scientific Committee

62. The TWG CMSA agreed to:
    (a) update the setting and specification of SAM (Annex D).
    (b) update the basic specifications for conducting future projections for chub mackerel (Annex E).
    (c) continue to work intersessionally in accordance with the agreed timeline (Annex G).

63. The TWG CMSA recommended that the SC:
    (a) recommend that the Commission note the status of the chub mackerel stock and management advice provided in paragraphs [37-42].
    (b) endorse the stock assessment executive summary (Annex F) and stock assessment report (to be submitted to SC intersessionally).
    (c) adopt the Work Plan of the TWG CMSA (NPFC-2024-TWG CMSA09-WP08 (Rev. 2)).
    (d) adopt the updated species summary for chub mackerel (Annex H).
    (e) consider the TWG CMSA's comments on the NPFC Performance Review recommendations that concern chub mackerel (NPFC-2024-SC09-WP01 (Rev. 1)).

(f) continue to hire an invited expert to support the TWG CMSA in 2025.

Agenda Item 12. Adoption of Report

64. The report was adopted by consensus.

Agenda Item 13. Close of the Meeting

65. The Chair thanked the participants for their hard work and cooperation.

66. The TWG CMSA thanked the Chair for his leadership, the Secretariat and invited expert for their support, and Japan for hosting the meeting.

67. The meeting closed at 18:15 on 20 July 2024, Yokohama time.

Annexes:

Annex A – Agenda
Annex B – List of Documents
Annex C – List of Participants
Annex D – Draft settings and specification of SAM
Annex E – Draft options for the basic specifications for conducting future projections for chub mackerel
Annex F – Executive summary of the stock assessment of chub mackerel
Annex G – Timeline and intersessional activities before the TWG CMSA10 meeting
Annex H – Species summary for chub mackerel

Please refer to the NPFC website for the complete annexes.

1st Meeting of the Small Scientific Committee on Neon Flying Squid

22-23 August 2024

Virtual

Meeting Report

Agenda

Agenda Item 1. Opening of the Meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Review of the draft Terms of Reference of the SSC NFS

Agenda Item 4. Overview of the outcomes of previous NPFC meetings related to NFS
- 4.1 Joint meeting of the Small Working Groups on NFS, JFS, JS, and BM
- 4.2 SC08 and COM08

Agenda Item 5. Updates on Members' fishery status and fishery-dependent abundance indices
- 5.1 Presentation prepared by each member in advance
- 5.2 CPUE standardization protocol

Agenda Item 6. Review of biological information for NFS

Agenda Item 7. Stock assessment modelling
- 7.1 Review of any updates and progress
  - 7.1.1 Potential updates on the surplus production models
- 7.2 Stock assessment protocol
- 7.3 Recommendations for future work

Agenda Item 8. Review of the Work Plan of the SSC NFS
- 8.1 Work Plan of the SSC NFS
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Agenda Item 9. Other matters
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- 9.3 Other

Agenda Item 10. Recommendations to the Scientific Committee

Agenda Item 11. Adoption of Report

Agenda Item 12. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 1st Meeting of the Small Scientific Committee on Neon Flying Squid (SSC NFS01) took place as a virtual meeting via WebEx, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and the Republic of Vanuatu. The Pew Charitable Trusts attended as an observer. An invited expert, Dr. Rujia Bi, participated in the meeting.

2. The meeting was opened by the SSC NFS Chair, Dr. Luoliang Xu (China), who welcomed the participants.

3. The Science Manager, Dr. Aleksandr Zavolokin, outlined the procedures for the meeting.

4. Mr. Alex Meyer was selected as rapporteur.

Agenda Item 2. Adoption of Agenda

5. The agenda was adopted (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Review of the draft Terms of Reference of the SSC NFS

6. The Chair presented the draft Terms of Reference of the SSC NFS (NPFC-2024-SSC NFS01-WP01).

7. The SSC NFS reviewed and revised the draft. The SSC NFS recommended that the Scientific Committee (SC) endorse the Terms of Reference of the SSC NFS (Annex D).

8. The SSC NFS requested that the Secretariat set up a GitHub site for the SSC NFS for data/code-sharing.

Agenda Item 4. Overview of the outcomes of previous NPFC meetings

4.1 Joint meeting of the Small Working Groups on NFS, JFS, JS, and BM

9. The Chair presented the NFS-related outcomes and recommendations from previous joint meetings of the Small Working Groups on NFS, Japanese flying squid (JFS), Japanese sardine (JS), and blue mackerel (BM).

4.2 SC08 and COM08

10. The Science Manager presented the outcomes from the 8th Commission meeting (COM08) of relevance to NFS, highlighting discussions related to the Performance Review Panel Report, the development of a regional observer program (ROP), and the Resolution on Climate Change. The SC and its subsidiary bodies, including the SSC NFS, are requested to provide responses on the Performance Review Panel recommendations. They are also requested to provide guidance to the Technical and Compliance Committee (TCC) on necessary observer coverage and data needs for an ROP, which the SSC NFS will address under agenda item 9.1. Regarding the Resolution on Climate Change, since COM08, the Food and Agriculture Organization of the United Nations (FAO) has agreed to fund a consultancy on climate change with the NPFC.

Agenda Item 5. Updates on Member's fishery status and fishery-dependent abundance indices

5.1 Presentation prepared by each member in advance

11. Korea presented its NFS fishery status up to 2023 (NPFC-2024-SSC NFS01-IP01). Korea has conducted exploratory fishing in the North Pacific Ocean in 2017 (1 vessel), 2021 (1 vessel) and 2022 (2 vessels). All Korean NFS catch is by stick-held dipnet vessels which have squid jigging licenses, but NFS is not their primary target species. The number of stick-held dipnet vessels fishing for squid has gradually decreased since 2016 to 6 in 2023. The NFS fishery is operated alongside the Pacific saury fishery and catches of NFS are most abundant from the end of July through August. Fishing grounds have consistently been situated east of 160°E longitude. In 2022, the average mantle length was lowest in August and highest in June, in 2021, it was similar between August and September and the highest in July, and in 2017, it was lowest in July and similar for September and October.

12. China presented its NFS fishery status up to 2023 (NPFC-2024-SSC NFS01-IP02 (Rev. 1)). Chinese jigging fishing fleets catch two cohorts of NFS in the Northwest Pacific Ocean: the autumn cohort and the winter-spring cohort, which are separated by the 170°E longitude line. During 2005–2008, the annual catch and vessel number for the winter-spring cohort were higher. After 2008, the catch and vessel number decreased gradually. The catch and vessel number for the autumn cohort increased year by year from 2012. In recent years, the catch and vessel number for the two cohorts decreased year by year. During 2018–2022, the winter-spring cohort were mainly caught in 37°N – 45°N, 146°E – 170°E, whereas the autumn cohort were mainly caught in 37°N – 45°N, 170°E – 160°W. The fishing area of the winter-spring cohort decreased from 2020 to 2021 and increased in 2022. The fishing area of the autumn cohort has

gradually expanded since 2018. Generally, the catch per unit effort (CPUE) of the winter-spring cohort peaked in July and August, and then gradually decreased, while the CPUE of autumn cohort decreased rapidly after July. The CPUE trend for the winter-spring cohort fluctuated slightly in the early years, then increased significantly after 2001. It suddenly decreased after 2007, with the lowest value in 2009. In recent years, the CPUE has remained at a relatively low level. For the autumn cohort, the CPUE has been stable relative to the winter-spring cohort.

13. Japan presented its NFS fishery status up to 2023 (NPFC-2024-SSC NFS01-IP03). Since the entry into effect of the High Seas Driftnet Fishing Moratorium in 1992, squid jigging has become Japan's main NFS fishery, with more than 99% of NFS caught by squid jigging. The total catch in 2023 was 4,396 MT. In general, Japanese fishing vessels mainly operate in the Convention Area east of 170°E from May to July. They have also operated in Japanese national waters in January and February. Most of the catch was taken in the Convention Area east of 170°E. There was almost no catch in national waters because fishing vessels operating in national waters in January and February targeted JFS. The number of vessels operating in the Convention Area east of 170°E has been stable since 2011 at around 25 vessels. The number of vessels operating in national waters has been decreasing in recent years. Nominal CPUE was 0.8 MT/day in the Convention Area west of 170°E and national waters, and 2.2 MT/day in the Convention Area east of 170°E.

14. Chinese Taipei presented its NFS fishery status up to 2023 (NPFC-2024-SSC NFS01-IP04). The NFS fishery is a part-time fishery. A total of 47 vessels were involved in the fishery with a catch of 319 MT in 2023. The highest annual catch was in 2004 at 9,022 MT. Vessels can target both NFS and Pacific saury and from 2001 to 2011, they mainly targeted NFS, but after 2016 they mainly targeted Pacific saury. In early years, NFS catch has occurred earlier in the fishing season, but in recent years, it has occurred later in the season. The nominal CPUE was 1.51 MT/day in 2023. The historical high was 10.69 MT/day in 2008. Fishing grounds were wider in 2022 compared to 2023. For size composition, NFS catch is categorized by commercial weight categories and larger NFS are caught later in the season.

15. Vanuatu presented its NFS fishery status up to 2023 (NPFC-2024-SSC NFS01-IP06). Vanuatu's NFS vessels have multiple gears onboard, are able to target both NFS and Pacific saury, and mainly target Pacific saury. Annual catch of NFS declined from 118 MT in 2019 to 2 MT in 2023. There were two active vessels fishing for NFS in 2023. Nominal CPUE was 0.2 MT/day in 2023. The fishing grounds are mainly between 150°E longitude and 160°E longitude, similar to the fishing grounds for Pacific saury.

16. Russia informed the SSC NFS that its vessels caught around 2 MT of NFS in 2023 as part of

experimental fishing in the Russian exclusive economic zone (EEZ) east of the Kuril Islands. On average, there was less than 100 kg of catch per day per vessel.

17. The SSC NFS noted that some Members' vessels have multiple gears onboard and can switch between targeting Pacific saury and NFS based on various considerations. This should be taken into consideration in future work on stock assessment and management of NFS. The SSC NFS suggested that spatio-temporal models would be able to incorporate the impacts of Pacific saury fisheries when standardizing the NFS CPUE for fishery-dependent data.

18. The SSC NFS agreed that it would be useful to have a protocol and standardized presentation format for sharing NFS fishery status information. The SSC NFS requested the Chair and the invited expert to draft a protocol for sharing fishery status information and present it at the next meeting. The SSC NFS agreed to develop a template for fishery status information for neon flying squid based on the template for Pacific saury.

19. China presented a CPUE standardization of NFS caught by the Chinese squid jigging fishery up to 2022 in the Northwest Pacific Ocean (NPFC-2024-SSC NFS01-WP06 (Rev. 1)). China conducted the CPUE standardization using a generalized additive model (GAM) and Xtreme gradient boosting model (XGB) and used the variance inflation factors (VIF) to screen out the variables with high multicollinearity. The performance differed between models and cohorts. The performance of the XGB was found to be better than that of the GAM. The trends for the nominal CPUE and the standardized CPUEs are generally consistent with each other, and the standardized CPUEs are more stable than the nominal CPUE for the two cohorts.

20. Japan suggested that in future CPUE standardizations, China should present the results using scaled values to enable better comparison of the XGB and GAM models.

21. The SSC NFS noted that China also has catch data from before 2005. The SSC NFS noted that these data would be useful for future stock assessment work and requested China to share them. China explained that the catch and effort data prior to 2005 were collected via logbooks, which represent only a portion of the total data.

22. China presented a summary of squid jigging surveys conducted between 2021 and 2023 by R/V Songhang, Shanghai Ocean University's pelagic fishery resources survey vessel (NPFC-2024-SSC NFS01-WP07 (Rev. 1)). Based on the surveys, the predominant squid species in the Northwest Pacific Ocean were found to be boreal clubhook squid, Boreopacific armhook squid, NFS, and luminous flying squid. Catch data from the surveys were collected and mapped. Basic biological characteristics of the squid species, including the mantle length (ML) composition,

body weight (BW) composition, ML-BW relationship, and sexual maturity composition, were also recorded. NFS was the most abundant species in the surveys and had a high concentration of immature individuals. The catch data between 2021 and 2023 showed an increased squid species diversity and increased total catch. The R/V Songhang's surveys for NFS will be continually improved going forward, and the fishery-independent biology information from the surveys will be provided to support NFS stock assessment work.

23. Japan presented a CPUE standardization for the autumn and winter-spring cohorts of NFS based on Japanese driftnet surveys conducted in the summer in the Northwest Pacific Ocean (NPFC-2024-SSC NFS01-WP09). The size of squid caught with driftnets showed a bimodal distribution, and Japan assumed that individuals smaller than the boundary separating the two peaks represented the winter-spring cohort, while larger individuals represented the autumn cohort. The autumn cohort was mainly caught at stations east of 170^{o}E, while the winter-spring cohort had a wider distribution. Japan estimated the standardized CPUE using GAM with temporal, spatial, and environmental variables, which showed large interannual variation for both cohorts. However, there were no clear increasing or decreasing trends over the years for either cohort. Japan suggested that a standardized survey CPUE may provide a fishery-independent abundance index for a future stock assessment by the SSC NFS. It also recommended that size information is essential for separating the two cohorts of NFS.

24. The SSC NFS suggested that Japan explore approaches that could account for spatio-temporal changes in the survey stations, for example applying a spatio-temporal model such as tinyVAST. The SSC NFS suggested that tinyVAST would also support a multi-cohort model and that the covariance between the autumn and winter-spring cohorts could be used to improve the standardized CPUE estimates for both cohorts. Furthermore, the SSC NFS suggested that spatio-temporal models would allow Japan to check for spatial residual patterns.

25. The SSC NFS suggested that in the future, Japan and China could consider sharing survey data to create one dataset with increased coverage or coordinate with each other when designing their respective surveys to maximize their combined survey coverage.

26. Japan presented an analysis of the differences in the distribution of the NFS by spawning cohort in the North Pacific Ocean (NPFC-2024-SSC NFS01-WP10). Japan estimated the hatching month and spawning cohort composition of NFS in the North Pacific Ocean by age determination using the statoliths of squid caught by Japanese surveys. Japan found that NFS caught in the waters east of 170°E includes both the autumn and the winter-spring cohorts. Therefore, to enable reliable separation of Member-specific commercial catch into two cohorts, it is important to clarify the size and age compositions of the catch. Japan recommended that

the SSC NFS review Member-specific information on size and age of commercial NFS catch in parallel with confirmation of spatial and temporal changes in fishing ground by Member.

27. Japan presented a summary of its surveys for NFS spawning grounds in the North Pacific Ocean (NPFC-2024-SSC NFS01-WP11). Japan examined information on the distribution of NFS paralarvae based on the results of its spawning ground surveys. The information indicates that NFS could be distributed in the waters both west and east of 170°E. In particular, the winter-spring cohort squid were distinctly distributed east of the 170°E boundary line, which the SSC NFS has applied as a tentative criterion for splitting catch data into two cohorts. Japan suggested that, to validate this criterion, it is necessary to confirm the cohort composition of the commercial catch of NFS towards conducting stock assessments of each cohort.

28. The SSC NFS agreed to hold further discussions at its next meeting on how to separate the two NFS cohorts for conducting stock assessments of each. The SSC NFS agreed that the 170°E longitudinal line is a useful general approach for separating the two cohorts but agreed that further information, such as size data, is needed to more accurately estimate the catch data by cohort.

5.2 CPUE standardization protocol

29. The Chair presented the draft CPUE Standardization Protocol for NFS (NPFC-2024-SSC NFS01-WP02).

30. The SSC NFS reviewed the draft and recommended the SC endorse the CPUE Standardization Protocol for NFS (Annex E).

31. The SSC NFS agreed to develop a template document for Members' CPUE standardizations and requested the SSC NFS Chair to present a draft template at the next meeting.

Agenda Item 6. Review of biological information for NFS

32. China presented the ML composition, BW composition, ML-BW relationship, and the sexual maturity composition for NFS caught in surveys by Chinese squid jigging vessels in the Northwest Pacific Ocean between 2007 and 2018 (NPFC-2024-SSC NFS01-WP08 (Rev. 1)). The data revealed that between 2007 and 2018, there was an interannual variability in ML and BW of NFS, showing a downward and then upward trend, and there was a shift in the individual size from short and fat to tall and thin, a phenomenon that may be related to the frequent occurrence of extreme weather events. These biological data can provide complementary information for an NFS stock assessment.

Agenda Item 7. Stock assessment modelling

7.1 Review of any updates and progress

7.1.1 Potential updates on the surplus production models

33. Japan presented a preliminary application of the stochastic surplus production model in continuous time (SPiCT) to the autumn and winter-spring cohorts of NFS in the North Pacific for demonstration purposes (NPFC-2024-SSC NFS01-WP12). NPFC statistics, including annual catch and effort from NFS fisheries in the North Pacific between 1995 and 2023, were used. CPUE standardized with a generalized linear mixed model including year and Member was used as a biomass index. The relationship between the biomass index and effort was found to be not represented by a negative slope in both NFS cohorts, contrary to the assumption of the surplus production model. At present, Members' available catch time series are for different time periods, which is one area that could be improved. Possibly due to such problems with the input data, results from the autumn cohort assessment were unacceptable, with wide confidence intervals of estimates, such as relative biomass and fishing mortality. In the winter-spring cohort model, the estimated values appeared acceptable as the model diagnostics were satisfactory and showed consistent retrospective patterns for relative biomass and fishing mortality. Input data preparation and the estimation of biomass indices will be important for NFS stock assessments. The main advantage of SPiCT is that it incorporates seasonality, so it can be a potential tool for assessing the NFS stock status using seasonal datasets, as has already been applied to other cephalopod stocks.

7.2 Stock assessment protocol

34. The Chair presented the draft Stock Assessment Protocol for NFS (NPFC-2024-SSC NFS01-WP03).

35. The SSC NFS reviewed the draft and recommended that the SC endorse the Stock Assessment Protocol for NFS (Annex F).

7.3 Recommendations for future work

36. The SSC NFS suggested that the issue of different data periods among Members' available catch time series could potentially be resolved by developing a joint standardized CPUE index.

37. The SSC NFS encouraged Japan to conduct further work to develop the SPiCT model, such as incorporating survey data and considering additional scenarios for separating the two NFS cohorts besides spatial structure, e.g., size structure.

38. China suggested that the autumn and winter-spring NFS cohorts could be two subpopulations and that migration might occur between them. China suggested a surplus production model that

incorporates spatial components could be appropriate for assessing the status of such a stock.

Agenda Item 8. Review of the Work Plan of the SSC NFS

8.1 Work Plan of the SSC NFS

39. The SSC NFS reviewed, revised, and endorsed the 2024-2028 SSC NFS 5-Year Rolling Work Plan (NPFC-2024-SSC NFS01-WP04 (Rev. 1)).

8.2 NPFC Performance Review recommendations

40. The Science Manager presented the proposed responses, drafted by the SSC NFS Chair with the SC Chair and the Secretariat, to the recommendations from the Performance Review report that concern NFS. The SSC NFS reviewed and further developed the proposed responses (NPFC-2024-SC09-WP01 (Rev. 3)).

Agenda Item 9. Other matters

9.1 Observer Program

41. The Science Manager informed the SSC NFS that the Commission requested that the SC provide guidance to the TCC on what level of observer coverage would be needed on fishing vessels and what kinds of data would need to be collected to achieve the scientific objectives of an ROP. Following this, the SC Chair has requested the SC's subsidiary bodies, including the SSC NFS, to consider the scientific objectives, data needs, and level of observer coverage, and to come to SC09 prepared to discuss these. In addition, the TCC Chair has asked the SC and its subsidiary bodies to answer the following questions: 1. Are there different needs for the different fisheries regarding data collection? 2. What new data would the SC prioritize/need from a ROP? 3. What new data would be nice to have (i.e. not needed/priority)? 4. Whether this data could be collected through electronic monitoring (EM)? 5. Whether the observer needs to be a scientist, or can data be collected by a non-scientist?

42. The SSC NFS noted the importance of collecting age and size composition data for more accurately separating the two cohorts of NFS. Size data can be collected by onboard observers or by port sampling. Such data could potentially be collected by electronic monitoring, but further study and technical work is needed to confirm whether this would indeed be possible. An observer collecting size composition data would not necessarily need to be a scientist but would need to be able to distinguish between different squid species, which could be achieved with the appropriate training and could possibly be further supported by the development of a species identification guidebook by the SSC NFS.

43. The SSC NFS agreed to develop a common sampling protocol for collecting NFS age and size data, taking into account individual Members' protocols. The SSC NFS requested Members to

initiate this work via correspondence in the intersessional period.

44. The Science Manager reminded the SSC NFS that some Members have noted that an ROP could be supplemented with national observer programs and presented a summary table showing the existence and type of Members' national observer programs in the Convention Area and adjacent EEZs (NPFC-2024-SC09-WP02 (Rev. 3)).

45. Vanuatu provided additional information about its national observer program and offered to work with the Secretariat to update the summary table on Members' national observer programs in the intersessional period.

9.2 Discussion on biological information/data sharing

46. The SSC NFS reviewed the data provision templates from SC08 (NPFC-2023-SC08-IP13 (Rev. 1)). The SSC NFS had no specific feedback about the templates. The SSC NFS encouraged Members to review and test the templates and provide their feedback by SC09.

9.3 Other

47. The SSC NFS reviewed and updated the species summary for NFS (NPFC-2024-SSC NFS01-WP05 (Rev. 1)). The SSC NFS agreed to continue to update the species summary further in the intersessional period leading up to SC09. The SSC NFS recommended that the SC adopt the updated species summary (Annex G) or a further updated version that will be presented at SC09.

48. The Science Manager provided an update on SC project #5: Invited expert to support SSC NFS, including the status of the project and proposals for future work in 2024 (NPFC-2024-SSC NFS01-IP06). The Science Manager invited the SSC NFS to review the proposal from the Chair and make other proposals for future work as appropriate.

49. The SSC NFS agreed to task the invited expert to:
    (a) assist the Chair in drafting a template for fishery status information, and
    (b) draft an overview summarizing the stock assessment methods and management measures that have been used for squids or other short-lived species with similar biological characteristics as NFS and present the overview at the next SSC NFS meeting, either in-person or remotely.

50. The SSC NFS recommended that the SC continue to hire an invited expert in 2025 to support the SSC NFS during its meetings and to conduct other work to support the SSC NFS as appropriate.

51. The SSC NFS agreed to hold two hybrid or in-person meetings in 2025, for three or four days each, with the dates to be determined at SC09.

52. The SSC NFS agreed to include climate change as a standing agenda item in future meetings.

Agenda Item 10. Recommendations to the Scientific Committee

53. The SSC NFS agreed to:
    (a) develop a template for fishery status information for neon flying squid based on the template for Pacific saury.
    (b) hold further discussions at its next meeting on how to separate the two NFS cohorts for conducting stock assessments of each.
    (c) develop a template document for Members' CPUE standardizations.
    (d) develop a common sampling protocol for collecting NFS age and size data, taking into account individual Members' protocols.
    (e) task the invited expert to:
        i. assist the Chair in drafting a template for fishery status information, and
        ii. draft an overview summarizing the stock assessment methods and management measures that have been used for squids or other short-lived species with similar biological characteristics as NFS and present the overview at the at the next SSC NFS meeting, either in-person or remotely.
    (f) hold two hybrid or in-person meetings in 2025, for three or four days each, with the dates to be determined at SC09.
    (g) include climate change as a standing agenda item in future meetings.

54. The SSC NFS recommended that the SC:
    (a) endorse the Terms of Reference for the Small Scientific Committee on Neon Flying Squid (Annex D).
    (b) endorse the CPUE Standardization Protocol for neon flying squid (Annex E).
    (c) endorse the Stock assessment protocol for neon flying squid (Annex F).
    (d) adopt the Work Plan of the SSC NFS (NPFC-2024-SSC NFS01-WP04 (Rev. 1)).
    (e) adopt the updated species summary for neon flying squid (Annex G) or a further updated version that will be presented at SC09.
    (f) consider the SSC NFS's comments on the NPFC Performance Review recommendations that concern neon flying squid (NPFC-2024-SC09-WP01 (Rev. 3)).
    (g) continue to hire an invited expert in 2025 to support the SSC NFS during its meetings and conduct other work to support the SSC NFS as appropriate.

Agenda Item 11. Adoption of the Report

55. The SSC NFS01 Report was adopted by consensus.

Agenda Item 12. Close of the Meeting

56. The meeting closed at 12:40 on 23 August 2024, Tokyo time.

Annexes:

Annex A – Agenda

Annex B – List of Documents

Annex C – List of Participants

Annex D – Terms of Reference for the Small Scientific Committee on Neon Flying Squid

Annex E – CPUE standardization protocol for neon flying squid

Annex F – Stock assessment protocol for neon flying squid

Annex G – Species summary for neon flying squid

Please refer to the NPFC website for the complete annexes.

13th Meeting of the Small Scientific Committee on Pacific Saury

26-29 August 2024

Virtual

Meeting Report

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Agenda Item 14. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 13th Meeting of the Small Scientific Committee on Pacific Saury (SSC PS13) took place as a virtual meeting via WebEx, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and the Republic of Vanuatu. The Ocean Foundation and the Pew Charitable Trusts attended as observers. Dr. Larry Jacobson participated as an invited expert.

2. The meeting was opened by Dr. Toshihide Kitakado (Japan), the SSC PS Chair, who welcomed the participants.

3. The Science Manager, Dr. Aleksandr Zavolokin, outlined the procedures for the meeting.

4. Mr. Alex Meyer was selected as rapporteur.

Agenda Item 2. Adoption of Agenda

5. The agenda was adopted (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Overview of the outcomes of previous NPFC meetings

3.1 SSC PS12 and SC08

6. The Chair presented the outcomes and recommendations from the SSC PS12 meeting and the 8th meeting of the Scientific Committee (SC08).

3.2 SWG MSE PS05

7. The Chair presented the outcomes and recommendations from the 5th meeting of the joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific saury (SWG MSE PS05).

3.3 COM08

8. The Science Manager presented the outcomes from the 8th Commission meeting of relevance

to Pacific saury, highlighting the discussions related to the establishment of a regional observer program (ROP), climate change, and Conservation and Management Measure (CMM) 2024-08 for Pacific Saury.

3.3.1 CMM 2024-08 for Pacific Saury

9. The Science Manager highlighted key aspects of CMM 2024-08 for Pacific Saury, including the incorporation of the interim harvest control rule (HCR); plans to establish implementation rules for the interim HCR; and catch management provisions related to the overall total allowable catch (TAC), the TAC for the Convention Area, and the reduction of each Member's total annual catches by 55% from 2018 levels.

3.3.2 Others

10. The Science Manager explained that the SC and its subsidiary bodies, including the SSC PS, are requested to provide guidance to the Technical and Compliance Committee (TCC) on necessary observer coverage and data needs for an ROP, which the SSC PS will address under agenda item 12.2. He also explained that regarding the Resolution on Climate Change, since COM08, the Food and Agriculture Organization of the United Nations (FAO) has agreed to fund a consultancy on climate change with the NPFC.

Agenda Item 4. Review of the Terms of References of the SSC PS and existing protocols

4.1 Terms of References of the SSC PS

11. The SSC PS reviewed the Terms of References (ToR) of the SSC PS and determined that no revisions are currently necessary.

4.2 CPUE Standardization Protocol

12. The SSC PS recommended an update to the catch-per-unit-effort (CPUE) Standardization Protocol in relation to model evaluation (Annex D).

4.3 Stock Assessment Protocol

13. The SSC PS reviewed the Stock Assessment Protocol and determined that no revisions are currently necessary.

Agenda Item 5. Member's fishery status including 2024 fishery

14. Chinese Taipei presented its fisheries status (NPFC-2024-SSC PS13-IP01). The catch returned to around 180,000 MT in 2018 after a 3-year consecutive decline, but a consecutive decline since then has been observed. In 2024, fishing vessels began operations in fishing grounds later than in previous years, and the catch distribution was further north than in the same period of 2023. Although the accumulated catch, 6,811 MT, by the end of July of 2024 is lower than that

of the same period of 2023, the nominal CPUE is 1.68 MT/haul in 2024, which is lower than the 2.32 MT/haul in 2023. Regarding the size box composition (S: less than 6 pcs/kg; 1: 7-9 pcs/kg; 2: 10-12 pcs/kg; 3: 13-15 pcs/kg; 4: 16-18 pcs/kg; 5: more than19 pcs/kg), the mode size boxes for Pacific saury caught in each month from June to October were 3, 5, 4, 4, and 5, respectively. Overall, the size of Pacific saury caught in 2023 was smaller than in 2022.

15. Vanuatu presented its fisheries status (NPFC-2024-SSC PS13-IP02). Total annual catch peaked at 8,231 MT in 2018. Total catch in 2023 was 1,108 MT. The 2024 fishing season began in mid-August and the catch so far has been around 85 MT. Vanuatu's Pacific saury fishery began in 2004. In total, it has authorized 16 vessels. The number of operating vessels was 4 from 2015 to 2021 and was 3 in 2022. Only 2 vessels were active in 2023. So far in 2024, only two vessels are active. An annual comparison of accumulated catch shows a trend of abundance increasing from September. The main part of the fishing season is from mid-September to the end of October. An annual comparison of the relative seasonal catch shows that there are usually two peaks in the fishing season. In 2023, the peaks were around mid-to-late September and late October. Nominal CPUE in 2023 was 9.8 MT/day. The main fishing grounds began in the east early in the season, before shifting to the west. In 2023, the fishing grounds were further north than in 2022 and like in 2022, they did not cross 165^{o}E longitude. Looking at the monthly size box compositions in 2023 (S: less than 6 pcs/kg; 1: 6-9 pcs/kg; 2: 10-12 pcs/kg; 3: 13-15 pcs/kg; 4: 15-18 pcs/kg; 5: more than 18 pcs/kg), there were no size box S catches and the percentage of size box 1 catches was very low.

16. Korea presented its fisheries status (NPFC-2024-SSC PS13-IP03). In 2023, total catch was 3,107 MT, a historical low, and annual catch has continued to decrease since 2018. In 2024, the total catch up to July was 1,403 MT, a decrease of 18% compared to the same period in 2023. The number of vessels operating has gradually decreased each year from 2015 to 2023 and has decreased from 6 in 2023 to 4 in 2024 due to the continued low level of Pacific saury catch. The nominal CPUE was 4.65 MT/vessel/day in 2023, around double that of the previous year. Standardized effort was 928 days in 2023, less than half of that in 2022. In June and July 2024, the fishing grounds were between 160^{o}E and 170°E longitude. In June and July of 2023 and 2024, the fishing grounds shifted northward compared to 2022. In 2023, the overall body length range was 20–32 cm. In June and July 2024, the overall body length range was 25–32 cm. By size box composition (S: 18–30cm; M: 23–33cm; L: 27–34cm; 2L: 29–34cm (fork length)) the S ratio was dominant for most of the 2023 fishing season, except from May to July. In June 2024, the S ratio was dominant, while in July, the M ratio became dominant. An annual comparison of body length composition shows no significant overall change, but the number of large individuals has been negligible in recent years.

17. China presented its fisheries status (NPFC-2024-SSC PS13-IP04). The annual catch decreased continuously after 2018, bottoming out in 2021. Total catch in 2023 was 39,252 MT. In 2024, total catch up to 3 August was 20,327 MT and a total of 56 vessels have been operating, a decrease of 1 from 2023. However, 3 more vessels are reportedly on their way to the fishing grounds. As of 3 August, nominal CPUE has been 9.85 MT/vessel/day in 2024. Standardized effort was 4,189 vessel days in 2023. The fishing grounds in 2024 have moved to the north and the west in June and July. A yearly comparison of body length compositions has been conducted up to 2022.

18. Japan presented its fisheries status (NPFC-2024-SSC PS13-IP05). Landings and nominal CPUE in 2023 were 24,465 MT and 0.59 MT/haul, respectively, slightly higher than in 2021 and 2022, but remaining at low levels. In 2019–2023, relative accumulated catch reached 50% by mid-October and 99% by the end of November. The highest seasonal catch in 2023 was at the end of October, at 23,636 MT. The seasonal catch at the end of October 2023 reached 18% of the total catch. By month, catch in October was the largest at 39%. Standardized effort was 81,770 hauls in 2023, the highest level in the last 5 years. The fishing grounds in August and September were mainly formed in the high seas, but from October the main fishing grounds moved into Japan's exclusive economic zone (EEZ). After mid-October, fishing grounds were also formed in the Sea of Okhotsk. The percentage of age-1 fish in 2023 was 20.3%, the lowest percentage since 2000. The mean body length of age-1 fish has been gradually decreasing since 2000. The fishing season in 2024 started on 10 August. 97 fishing vessels were registered in 2024, compared to 109 fishing vessels in 2023.

19. The Chair informed the SSC PS that Canada's Pacific saury catch information is available in NPFC-2024-SSC PS13-IP07. Canada does not have a commercial fishery targeting Pacific saury, but occasionally takes Pacific saury as bycatch.

20. The Science Manager informed the SSC PS that the compiled data on Pacific saury catches in the northwestern Pacific Ocean from 1950 to 2023 are available in NPFC-2024-SSC PS13-WP01.

21. The Science Manager presented the cumulative catch of Pacific saury as of mid-August in 2020, 2021, 2022, 2023, and 2024. The cumulative catch in 2024 is approximately 34,760 MT compared to 36,487 MT in 2023, 14,342 MT in 2022, 23,701 MT in 2021, and 9,875 MT in 2020.

Agenda Item 6. Fishery-independent abundance indices

6.1 Review of results of abundance estimation including 2024 Japanese biomass survey

22. Japan presented a report of its 2024 biomass survey (NPFC-2024-SSC PS13-IP06). The Japanese biomass survey was conducted with three research vessels, all using the same type of trawl (NST-99). The survey was conducted at 137 stations from 15 June to 13 July and covered the area from 143°E to 165°W. 40,044 individuals were caught in the survey. Pacific saury occurred between 155°E and 165°W. The age-1 fish were mainly distributed between 155°E and 159°E. Comparing the surveys in 2023 and 2024, the abundance in the survey area increased west of 160°E in 2024, while Pacific saury were less abundant around the date line in 2024.

23. Japan presented the Japanese survey biomass index of Pacific saury up to 2024 using the Vector Autoregressive Spatio-temporal (VAST) model (NPFC-2024-SSC PS13-WP06). Japan applied the VAST model to Japanese fishery-independent survey data to predict the Pacific saury distribution and estimate the biomass index from 2003 to 2024. The estimated biomass index from the selected VAST model with minimum Akaike information criterion (AIC) indicated similar year trends with the index from a design-based approach. In 2020, the estimated biomass index dropped to the lowest level historically since 2003. It subsequently recovered but remained at a low level in 2024. Japan recommended using the estimated biomass index in the Bayesian State-Space Production Model (BSSPM) stock assessment because the retrospective analysis indicated that the biomass index estimates derived from the VAST model would be robust to data updates.

24. The SSC PS agreed to use the Japanese survey biomass index of Pacific saury up to 2024 using the VAST model as an input for the stock assessment.

6.2 Review of plans of future biomass surveys

25. Japan informed the SSC PS that it plans to conduct its biomass survey with the usual method in 2025.

6.3 Recommendations for future work

26. The SSC PS noted that in the latest biomass estimates using the VAST model with data up to 2024, the year trend from 2022 to 2023 shows a decrease, whereas in the previous biomass estimates using the VAST model with data up to 2023, the trend in those years showed an increase. The SSC PS encouraged Japan to conduct further analyses to better understand the reason for this difference.

27. The SSC PS encouraged Japan to conduct further analyses to test the robustness of its VAST model against spatial changes in the surveyed area, such as by testing the fit of the model to historical data if the data from the area that was not surveyed in 2023 is excluded from past

years as well.

28. The SSC PS encouraged Japan to continue to conduct its biomass survey and other Members to conduct research surveys or share data from existing research surveys that could complement the Japanese biomass survey and provide useful information for better understanding the Pacific saury stock.

Agenda Item 7. Fishery-dependent abundance indices

7.1 Review of Members' standardized CPUEs up to 2023

29. China presented a standardization of CPUE data for Pacific saury from 2013 to 2023 using generalized linear model (GLM) and generalized additive model (GAM) on the assumption of lognormal distribution of errors (NPFC-2024-SSC PS13-WP02 (Rev. 1)). China recommended using the standardized CPUE derived from GAM as an input for the stock assessment.

30. The SSC PS noted that China's fishing season was shortened in 2023 due to regulatory reasons, resulting in a shorter month window in 2023 compared to other years in the CPUE standardization. At the request of the SSC PS, China presented the results of a CPUE standardization conducted with a common month window (June to September) for comparison with its original CPUE standardization. The SSC PS noted that the results between the two CPUE standardizations were generally consistent. The SSC agreed that the originally presented CPUE standardization could be used for the stock assessment and encouraged China to conduct further analyses on how to treat this issue in its future CPUE standardizations.

31. The SSC PS agreed to use China's standardized CPUE derived from GAM as an input for the stock assessment.

32. Japan presented a standardization of CPUE data for Pacific saury from 1994 to 2023 using GLM (NPFC-2024-SSC PS13-WP03). Japan recommended using the standardized CPUE derived from GLM as input for the stock assessment.

33. The SSC PS agreed to use Japan's standardized CPUE derived from GLM as an input for the stock assessment.

34. Japan presented a progress report on its ongoing efforts to develop a VAST model for conducting CPUE standardizations for Pacific saury (NPFC-2024-SSC PS13-WP04). Japan has improved the VAST model presented at SSC PS11 (NPFC-2023-SSC PS11-WP07) by incorporating essential explanatory variables (interactions between year and month) and has used it to conduct a preliminary standardization of CPUE data for Pacific saury from 1994 to

2023. The standardized CPUE derived from the selected VAST model with minimum AIC indicated similar year trends with that derived from GLM. One concern with the constructed model is that it does not take advantage of the VAST model to consider the distributional similarities between adjacent times (i.e., months in this analysis). Nevertheless, although a model using, for example, a year-month time step may be necessary for capturing reliable interannual seasonal changes in spatial distribution and discussing their plausibility, the VAST model selected in this analysis would be sufficient for CPUE standardization objectives.

35. The SSC PS welcomed Japan's progress report and its ongoing efforts to develop a VAST model for conducting CPUE standardizations for Pacific saury.

36. Korea presented a standardization of CPUE data for Pacific saury from 2001 to 2023 using GLM (NPFC-2024-SSC PS13-WP07). Korea recommended using the standardized CPUE derived from GLM as input for the stock assessment.

37. The SSC PS agreed to use Korea's standardized CPUE derived from GLM as an input for the stock assessment.

38. Chinese Taipei presented a standardization of CPUE data for Pacific saury from 2001 to 2023 using GLM on the assumption of lognormal distribution of errors (NPFC-2024-SSC PS13-WP08 (Rev. 1)). The analysis employed two approaches: a non-divided period approach and a two-divided period approach. Chinese Taipei recommended using the standardized CPUE derived from GLM with the two-divided period approach as an input for the stock assessment, as this approach accounted for the impact of fishing efficiency changes due to the significant replacement of older fishing vessels with new ones.

39. The SSC PS agreed to use Chinese Taipei's standardized CPUE derived from GLM using the two-divided period approach as an input for the stock assessment.

40. Russia explained that there was only one active Russian vessel fishing for Pacific saury in 2023, that this vessel was unable to conduct full operations due to technical issues, and that it only operated for 11 fishing days across October and December catching around 51 MT of Pacific saury. Russia explained that it did not consider this vessel to be representative of the overall Russian Pacific saury fleet and therefore did not conduct an updated CPUE standardization with the 2023 data.

41. The SSC PS noted Russa's explanation and agreed that the lack of an updated Russian CPUE standardization for 2023 would be unlikely to have a substantive impact on the Pacific saury

stock assessment.

42. Vanuatu provided an update on its ongoing work to conduct a CPUE standardization for 2014 to 2023 using GLM.

43. The SSC PS welcomed Vanuatu's efforts as a good first step towards incorporating Vanuatu's standardized CPUE data in the Pacific saury stock assessment.

7.2 Review of joint CPUE

44. Chinese Taipei presented a joint CPUE standardization of Pacific saury in the Northwestern Pacific Ocean from 1994 to 2023 using a VAST model (NPFC-2024-SSC PS13-WP09). Step plots indicated that the spatio-temporal variable had a large influence on the time series of estimated CPUE compared to other effects in VAST. The results indicated that the annual standardized CPUE trend had a fluctuating pattern over the studied periods, and the annual standardized CPUE value in 2023 was slightly increased compared to 2022. For future joint CPUE standardizations, it is recommended that the use of other catchability covariates, such as vessel ID, be explored.

45. At the request of the SSC PS, Chinese Taipei presented further analyses in which Chinese Taipei's CPUE data are divided into two periods in the joint CPUE standardization. The SSC PS noted that the updated joint CPUE standardization and the one originally presented by Chinese Taipei showed generally consistent trends. The SSC PS indicated its preference to use the updated joint CPUE standardization because its treatment of Chinese Taipei's CPUE data is consistent with the treatment in Chinese Taipei's standardized CPUE index.

46. The SSC PS agreed to use the standardized joint CPUE with Chinese Taipei's CPUE data divided into two periods as an input for the stock assessment.

47. The finalized table of abundance indices is attached to the report as Annex E. A plot of Members' standardized CPUEs is attached to the report as Annex F.

7.3 Recommendations for future work

48. The SSC PS noted that there may be instances in the future where Members have to shorten their fishing seasons for regulatory reasons, as was the case for China in 2023. The SSC PS noted the need to hold further discussions on how to treat such shortened fishing seasons in future CPUE standardizations. The SSC PS agreed to investigate the sensitivity and robustness of Members' CPUE standardizations to changes in the duration of their fishing seasons over time.

49. The SSC PS encouraged Japan to continue its efforts to develop a VAST model for conducting CPUE standardizations for Pacific saury.

50. The SSC PS encouraged Chinese Taipei to continue to investigate approaches for modeling the effect of the replacement of old fishing vessels with new vessels of differing sizes, shapes, and technical capabilities in its CPUE standardization.

51. The SSC PS encouraged Vanuatu to continue its work to conduct a CPUE standardization and to submit a working paper detailing this work to SSC PS14 and/or SSC PS15.

Agenda Item 8. Biological information on Pacific saury

8.1 Review of any updates and progress

52. No updates were provided.

8.2 Recommendations for future work

53. The SSC PS encouraged Members' biologists to continue their collaboration with modelers and to participate in meetings of the Working Group on New Stock Assessment Models (WG NSAM).

Agenda Item 9. Stock assessment using "provisional base models" (BSSPM)

9.1 Review and update of the existing specification

54. The SSC PS agreed to maintain the framework of the existing specification of the stock assessment using BSSPM but with the Chinese Taipei standardized CPUE index split into two periods with separate fixed catchability coefficients for each period, and to include an additional year of data for all indices (Annex G).

9.2 Recommendations for future work

55. The SSC PS encouraged Chinese Taipei to conduct sensitivity analyses comparing the impact of the following assumptions of catchability for the Chinese Taipei standardized CPUE index: 1. separate fixed catchability coefficients for two time periods, and 2. a gradual time-varying catchability coefficient for the combined period.

Agenda Item 10. New stock assessment models

10.1 Review of the outcomes of WG NSAM01 meeting

56. The WG NSAM Lead, Dr. Libin Dai, presented a progress report of the first and second WG NSAM meetings in 2024 (NPFC-2024-SSC PS13-IP09). The individual meeting reports are available in NPFC-2024-SSC PS13-RP01 & RP02.

10.2 Review of any progress on new stock assessment models

10.2.1 Stock Synthesis 3

57. The WG NSAM Lead presented exploratory work to try to improve the fit of the Stock Synthesis 3 model developed in the Shanghai meeting to size data. The key settings were to estimate the growth within the model, apply two time-varying catchability coefficients for the early Japanese standardized CPUE index and the Chinese Taipei standardized CPUE index, and estimate all double normal selectivity parameters. The modified settings improved the model fit to the Japanese and Chinese size data, but some lack of fit remained. The WG NSAM Lead pointed out that the model remained unstable in terms of its prediction skill. He also noted that even minor changes to the settings may affect the selectivity or growth function.

58. The SSC PS welcomed the work conducted by the WG NSAM Lead and Members. The SSC PS agreed on the need to exercise caution when making changes to the model settings, especially to the growth function.

10.2.2 State-space age-structured model

59. Japan presented its ongoing work to develop a state-space stock assessment model (SAM) for Pacific saury (NPFC-2024-SSC PS13-WP05). Japan tested the usefulness of including temporally-lagged North Pacific Gyre Oscillation (NPGO) indices in the stock recruitment relationship of SAM for future prediction of Pacific saury recruitment and population dynamics. Japan tested several annual NPGO indices with different lags and found that 12-month-lagged time series increased the goodness-of-fit of the model the best. With this time series, SAM showed a better hindcasting performance relative to one without any environmental information.

60. The SSC PS thanked Japan and encouraged it to continue its work to investigate the impact of the environment on the Pacific saury population, noting that such work could also inform other modeling frameworks, including Stock Synthesis 3.

10.3 Recommendations for future work

61. The SSC PS encouraged Members to continue to develop the Stock Synthesis 3 model through the WG NSAM, particularly improving the model's prediction skill and the model fitting. The SSC PS emphasized the importance of further collaboration between modelers and biologists to support the continued model development work.

Agenda Item 11. Toward development of management procedures (MPs) as a mid-term goal

11.1 Work plan

62. The Chair summarized the work done to develop and adopt an interim harvest control rule (HCR) as a short-term task and the progress made to date towards the development of MPs as a mid-term goal.

63. The SSC PS requested that the Chair draft a proposed timeline for the development of MPs for further discussion at SSC PS14 and SWG MSE PS06 and for the consideration and potential endorsement of the Commission.

11.2 Other

64. The SSC PS reaffirmed that the recommended total allowable catch for Pacific saury in the Convention Area in 2025 will be determined based on the adopted interim HCR.

Agenda Item 12. Other matters

12.1 Data provision templates and data inventory

65. The SSC PS reviewed the data provision templates from SC08 (NPFC-2023-SC08-IP13 (Rev 1)). The SSC PS had no specific feedback about the templates. The SSC PS encouraged Members to review and test the templates and provide their feedback by SC09.

66. The Science Manager informed the SSC PS that the Secretariat has developed a data inventory policy and has begun populating the inventory. The details are available in NPFC-2024-SC09-WP03. A further update will be provided at SSC PS14.

12.2 Observer Program

67. The Science Manager informed the SSC PS that the Commission requested that the SC provide guidance to the Technical and Compliance Committee (TCC) on what level of observer coverage would be needed on fishing vessels and what kinds of data would need to be collected to achieve the scientific objectives of an ROP. Following this, the SC Chair has requested the SC's subsidiary bodies, including the SSC PS, to consider the scientific objectives, data needs, and level of observer coverage, and to come to SC09 prepared to discuss these. In addition, the TCC Chair has asked the SC and its subsidiary bodies to answer the following questions: 1. Are there different needs for the different fisheries regarding data collection? 2. What new data would the SC prioritize/need from a ROP? 3. What new data would be nice to have (i.e. not needed/priority)? 4. Whether this data could be collected through electronic monitoring (EM)? 5. Whether the observer needs to be a scientist, or can data be collected by a non-scientist?

68. The Science Manager reminded the SSC PS that some Members have noted that an ROP could be supplemented with national observer programs and presented a summary table showing the existence and type of Members' national observer programs in the Convention Area and

adjacent exclusive economic zones (NPFC-2024-SC09-WP02 (Rev. 4)).

69. The Science Manager presented the proposed responses to the TCC Chair's questions drafted during the meeting. The SSC PS reviewed and finalized its responses to the TCC Chair's questions (NPFC-2024-SC09-WP04 (Rev. 1)).

12.3 Draft agenda, priority issues and timeline for next meeting

70. The SSC PS outlined an agenda and timeline for SSC PS14 which includes regular work and new topics such as climate change and Pacific saury bycatch. An updated timeline with a list of expected documents will be circulated to SSC PS Members shortly after the meeting.

71. The SSC PS agreed on the following priorities for the next meeting:
    (a) Review progress on the development of age-structured stock assessment models.
    (b) Review progress on the BSSPM analyses and provide management advice, including annual catch level based on the interim HCR.
    (c) Review Pacific saury bycatch information from Members.

12.4 Other

72. The consultant, Dr. Jihwan Kim, presented the results of a study on the spatio-temporal variability of density distribution of Pacific saury and its relationship to basin-scale ocean environmental variability in the North Pacific (NPFC-2024-SSC PS13-IP08 (Rev. 2)). In the study, the integration and spatio-temporal decomposition of gridded data from all Members were performed to analyze variability in the nominal CPUE of Pacific saury. The results reveal three leading CPUE modes linked to basin-scale environmental factors: subsurface temperature in the Oyashio Current region, Kuroshio Extension dynamics, and biological productivity in the Kuroshio-Oyashio Extension region. These modes reflect long-term trends and shifts in the density distribution of Pacific saury across the Northwestern Pacific. The first mode reveals a distinct seasonal fishing pattern, while the second and third modes indicate zonal and meridional distribution shifts, respectively. The results also suggest a correlation between CPUE variability and the North Pacific Gyre Oscillation, implying a connection to basin-scale ocean environmental variability. The results are valuable for refining Pacific saury stock assessments and understanding the wider marine ecosystem's relationship to ocean environmental change.

73. The SSC PS welcomed the work done by the consultant, suggested potential improvements to the study, and encouraged him to conduct further analyses.

74. The SSC PS noted the plans to publish this work in a scientific journal and discussed data

access considerations related to Members' monthly 1 x 1 degree CPUE data used in the study. The SSC PS recalled that at SSC PS12, Members agreed that monthly 1 x 1 degree CPUE data and time series of biomass estimates would be shared with the consultant for analyses on the relationship between Pacific saury abundance indices and basin-scale ocean environmental variability in the North Pacific. The SSC PS agreed that the results presented by the consultant could be posted on the public domain of the NPFC website as part of the NPFC's work. The SSC PS agreed that these results could only be presented publicly as part of an external publication, such as a journal paper, if formal approval is provided by the data owners.

75. The SSC PS requested the Secretariat to draft a proposed revision to the Regulations for Management of Scientific Data and Information to reflect the need to seek the formal approval of data owners when publishing their data in an external publication and to present the proposed revision to SC09.

76. The Data Coordinator, Mr. Sungkuk Kang, provided an update on the GitHub repository and user manual (NPFC-2024-SSC PS13-IP10). He explained that the Secretariat officially submitted the application for the GitHub Nonprofit Plan on 5 February 2024. However, the Secretariat was informed that due to a high volume of tickets, the approval process may be delayed. The Secretariat will continue to try to get the approval from GitHub for the use of the Nonprofit Team Plan. As a contingency plan, the Secretariat has established a GitHub Free Plan to be used until then. The Secretariat has also developed a user manual that is available on the NPFC website and can be continuously enhanced based on feedback from Members.

Agenda Item 13. Adoption of the Report

77. The SSC PS13 Report was adopted by consensus.

Agenda Item 14. Close of the Meeting

78. The Chair thanked the participants for their engagement and cooperation, the invited expert for his guidance, and the Secretariat and rapporteur for their support.

79. The meeting closed at 09:40 on 29 August 2024, Tokyo time.

Annexes:

Annex A – Agenda

Annex B – List of Documents

Annex C – List of Participants

Annex D – Revised CPUE Standardization Protocol for Pacific Saury

Annex E – Updated total catch, CPUE standardizations and biomass estimates for the stock assessment of Pacific saury

Annex F – Time series of Members' standardized CPUE and joint standardized CPUE from 1980-2023 and Japanese survey index from 2003-2024

Annex G – Specifications of the BSSPM

Please refer to the NPFC website for the complete annexes.

5th Meeting of the Small Scientific Committee on Bottom Fish and Marine Ecosystems

9-11 December 2024

Tokyo, Japan (Hybrid)

Meeting Report

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MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 5th Meeting of the Small Scientific Committee on Bottom Fish and Marine Ecosystems (SSC BF-ME05) was held in a hybrid format, with participants attending in-person in Tokyo, Japan, or online via WebEx, on 9–11 December 2024. The meeting was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, and the United States of America (USA). The Deep Sea Conservation Coalition (DSCC) and the Pew Charitable Trusts (Pew) attended as observers. Dr. Maite Pons and Dr. Joel Rice participated as invited experts.

2. The meeting was opened by the SSC BF-ME Chair, Dr. Chris Rooper (Canada).

3. Japan welcomed the participants to Tokyo and thanked the Secretariat for its work to prepare for the meetings. Japan expressed its hope that the SSC BF-ME would continue to make progress in the management of bottom fish and conservation of associated marine environments and that the participants would enjoy their time in Tokyo, especially the night-life.

4. The Science Manager, Dr. Aleksandr Zavolokin, and the Data Coordinator, Mr. Sungkuk Kang, outlined the meeting procedures and logistics.

5. Mr. Alex Meyer was selected as rapporteur.

Agenda Item 2. Adoption of Agenda

6. The SSC BF-ME reviewed the provisional agenda and agreed to add two new sub-agenda items: “10.1.6 Proposal for VME closure – Japan” and “16.3 FAO request for deep-sea fishing effort data.”

7. The revised agenda was adopted (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Overview of the outcomes of previous NPFC meetings

3.1 SSC BFME04

8. The Chair summarized the discussions and outcomes of the SSC BF-ME04 meeting.

3.2 COM08

9. The Science Manager presented the outcomes from the 8th Commission meeting (COM08) that concern the SSC BF-ME.

3.2.1 CMMs 2024-05 and 2024-06

10. The Science Manager outlined the revisions made by COM08 to Conservation and Management Measure (CMM) 2024-05 for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems (VMEs) in the Northwestern (NW) Pacific Ocean and CMM 2024-06 for Bottom Fisheries and Protection of VMEs in the Northeastern (NE) Pacific Ocean.

3.2.2 Requests from COM08

11. The Science Manager reminded the SSC BF-ME that paragraph 10 of CMM 2023-14 on Sharks, adopted at COM07, requires Members to annually report all shark catches. A new section for shark reporting will be added by the Secretariat to the electronic Annual Report on the NPFC website soon.

Agenda Item 4. Stock assessment and scientific advice on the management of North Pacific armorhead (NPA)

4.1 Review of Members fishing statistics for NPA in 2023

12. The Science Manager presented the fishing catch and effort statistics for NPA including the latest available data for 2023. Total catch in 2023 was around 148 MT. 1 Japanese trawl and 1 Japanese gillnet vessel were in operation catching NPA and splendid alfonsino (SA) in the Convention Area.

4.2 NPA monitoring survey and Adaptive Management Procedure (AMP)

4.2.1 Review of the results from 2024 monitoring survey

13. The Science Manager presented the results of the monitoring survey for NPA in the Emperor Seamounts in 2024 (NPFC-2024-SSC BFME05-IP01). The fishing vessel Kaiyo Maru No.51 conducted four trawl hauls for at least one hour each in the Kammu and Koko Seamounts from March to June 2024. The criteria for high recruitment were not met.

4.3 Review of Members' research and joint research activities on NPA

4.3.1 NPA species summary document update and review

14. The SSC BF-ME reviewed the updated species summary of NPA in the Emperor Seamounts (NPFC-2024-SSC BFME05-WP02).

15. The SSC BF-ME recommended that the Scientific Committee (SC) adopt the updated species summary (Annex D).

4.3.2 Other research activities on NPA

16. No other research activities were presented.

4.3.3 Future and planned research activities by Members on NPA in 2025

17. No future and planned research activities by Members on NPA in 2025 were presented.

Agenda Item 5. Stock assessment and scientific advice on the management of splendid alfonsino (SA)

5.1 Review of Members fishing statistics for SA in 2023

18. The Science Manager presented the fishing catch and effort statistics for SA including the latest available data for 2023. Total catch in 2023 was around 1,701 MT. 1 Japanese trawl and 1 Japanese gillnet vessel were in operation catching NPA and SA in the Convention Area.

5.2 Review of Members' research and joint research activities on SA

5.2.1 SA species summary document update and review

19. The SSC BF-ME reviewed the updated species summary of SA in the Emperor Seamounts (NPFC-2024-SSC BFME05-WP03).

20. The SSC BF-ME recommended that the SC adopt the updated species summary (Annex E).

5.2.2 Other research activities on SA

21. No other research activities were presented.

5.2.3 Future and planned research activities by Members on SA in 2025

22. No future and planned research activities by Members on SA in 2025 were presented.

Agenda Item 6. Stock assessment and scientific advice on the management of sablefish

6.1 Review of Members fishing statistics for sablefish in 2023

23. Canada informed the SSC BF-ME that no Canadian vessels have fished for sablefish in the Convention Area since 2020.

6.2 Review of Members' research and joint research activities on sablefish

6.2.1 Updated stock status for sablefish (Canada and USA)

24. Canada presented a brief update, jointly prepared with the United States, on sablefish status in the eastern North Pacific, including the NPFC Convention Area (NPFC-2024-SSC BFME05-WP06). Domestic sablefish stock assessments are conducted in three regions: Alaska (age-structured model, annual), Canada (management strategy evaluation (MSE) with age-structured operating model (OM), ~3-year cycle), and US West Coast (age-structured model, ~3–5-year cycle). The most recent assessments all indicate that the sablefish stock is healthy and not subject to overfishing. In all three regions, the stock is well above the upper stock reference point. In the NPFC Convention Area, there has been no fishery catch or effort since 2020.

25. The SSC BF-ME developed a stock status summary for sablefish, as shown in Annex I, and recommended that the SC Chair present the information in the summary to the Commission.

6.2.2 Sablefish species summary document update and review

26. The SSC BF-ME reviewed the updated species summary of sablefish (NPFC-2024-SSC BFME05-WP04).

27. The SSC BF-ME recommended that the SC adopt the updated species summary (Annex F).

28. The SSC BF-ME reviewed the updated species summary of blackspotted and rougheye rockfishes (NPFC-2024-SSC BFME05-WP05).

29. The SSC BF-ME recommended that the SC adopt the updated species summary (Annex G).

6.2.3 Other research activities on sablefish

30. Canada explained that the following research activities are ongoing by Canada and the United States:

(a) Sensitivity analysis of OM to aging effort and age composition among gear types.
(b) Coastwide analysis of climate and recruitment.
(c) Coastwide MSE process.
(d) Spatial assessment that includes age-based movement in Alaska.
(e) VME MSE process using Bowie-SGaan Kinglas data.

6.2.4 Future and planned research activities by Members on sablefish in 2025

31. Canada explained that the following research activities are planned in 2025:

(a) Integrating climate-linkages to early life history stages towards developing a full life cycle spatial model for sablefish.

(b) Ongoing work to develop electronic tagging database and use in the spatial model.

Agenda Item 7. Skilfish in the NPFC Convention Area

7.1 Updated catch and effort for skilfish in 2023

32. Russia informed the SSC BF-ME that no Russian vessels have fished for skilfish in the Convention Area in 2023 and 2024.

7.2 Skilfish species summary document update and review

33. Russia presented a draft species summary of skilfish (NPFC-2024-SSC BFME05-WP20).

34. The SSC BF-ME reviewed and further updated the draft species summary.

35. The SSC BF-ME recommended that the SC adopt the updated species summary (Annex H).

Agenda Item 8. Progress on data-limited approaches to assessment of NPA and SA

8.1 Update from SWG NPA-SA

36. The SWG NPA-SA Lead, Dr. Kota Sawada (Japan), presented a summary of the intersessional progress made by the SWG NPA-SA on the tasks it was assigned by SSC BF-ME04 (NPFC-2024-SSC BFME05-WP17). Further details are described in Agenda Items 8.1.1–8.1.4 below.

8.1.1 Review of joint work on life history-based approach to stock assessment

37. The SWG NPA-SA Lead explained that the SWG NPA-SA has:

(a) improved the estimation of life-history parameters conducted in 2023, considering the uncertainty of parameters by sensitivity analyses.
(b) conducted life history-based analyses on the stock status of SA.
(c) considered the uncertainty of parameter estimates by running sensitivity analyses.

8.1.2 Review of stock status for SA

38. Dr. Pons presented updated estimates of life history parameters for SA in the North Pacific, specifically examining growth, maturity, and the length-weight relationship (NPFC-2024-SSC BFME05-WP08). Growth estimates align with recent local studies and other studies around the world. However, the differences in growth parameters by gear type underscore the potential impact of gear selectivity (and catchability), with gillnets appearing to sample larger individuals compared to trawls. This sampling bias may influence growth assessments and has implications for accurately modeling SA growth. The sensitivity of maturity estimates to data sources was also evident, with substantial variation observed between Gonadosomatic Index (GSI)-based and histology-based maturity curves. Additionally, the Member-specific maturity estimates based on histological data reveal possible inconsistencies among protocols

or representativeness of the data. However, the GSI model using combined data from all countries appears to balance these differences, potentially providing an average estimate across regional variability. The updated length-weight relationship for SA aligns closely with previous estimates.

39. Dr. Pons presented yield per recruit (YPR) and length-based spawning biomass per recruit (LBSPR) analyses for SA in the North Pacific (NPFC-2024-SSC BFME05-WP09). The YPR analysis suggested that, for the scenarios of both the trawl and gillnet fisheries combined, fish are being harvested before they reach the size where YPR is optimized, suggesting growth overfishing. The LBSPR analysis suggested that SA is experiencing recruitment overfishing with low estimated spawning potential ratio (SPR) values and high fishing mortality rates. SA are being fished before they mature, reducing the abundance of mature individuals and therefore future recruitment. The most pessimistic scenario is when using the length data and selectivity from all gears combined. However, these results may be biased towards overfishing due to the dome-shaped selectivity of the trawl gear, which is the main fishery contributing to total SA catch. The analyses were very sensitive to the life history input parameters, in particular growth for the YPR analyses and maturity estimates for the spawning biomass per recruit (SPBR) analysis. Moreover, growth estimates are essential to estimate M from empirical studies. Assessing a multi-gear fishery with data-limited methods is challenging because these methods do not allow for multiple gears and for dome-shaped selectivity. More complex models that could manage different fleets with different selectivity assumptions may be needed. Integrated models that use data from different fleets with different selectivity shapes could be an alternative to data-limited assessment to better understand the status of SA and improve fisheries management.

40. The SSC BF-ME reviewed and revised the science advice on SA from the SWG NPA-SA and summarized it in Annex I.

8.1.3 Review of alternative approaches to NPA assessment

41. The SWG NPA-SA Lead explained that the SWG NPA-SA has:

(a) agreed to consider integrated modelling (e.g. Stock Synthesis, Methot and Wetzel 2013) with multiple fleets to assess the SA stock next year, and that the SWG NPA-SA recommended assigning higher priority to catch per unit effort (CPUE) standardization work, if integrative modeling of SA becomes a future task for the group.

(b) reviewed the data for depletion analysis of NPA shared by Members (Japan and Korea) and the update on individual-based bioenergetic modeling (IBM) of NPA presented by Canada.

8.1.4 Review of the effectiveness of current CMMs for NPA and SA

42. The SWG NPA-SA Lead explained that the SWG NPA-SA has:

(a) developed and agreed upon the Term of References for sharing SA catch size composition data, reviewed the data shared by Members, and reviewed the preliminary analyses by Japan on the impact of trawl's mesh size change on SA catch size composition introduced from 2019.

(b) reviewed preliminary work conducted by Japan to monitor the trend of directed effort for NPA and recommended further analyses.

43. Japan presented a study on the impact of mesh size change on catch size composition of splendid alfonsino (NPFC-2024-SSC BFME05-WP15). Japan explained that previous evaluation of size composition data found no change following the implementation of the new mesh size regulations. The reevaluation in this study was conducted using a more robust size composition dataset spanning from 2013 to 2023, while also comparing the effects of different seamounts, fishing vessels, and seasons. The analysis found no clear relationship between the mesh changes and mean fork-length of SA over time, but there was significant year-to-year variation in length frequencies. While there is some evidence that suggests an increase of catch size in recent years, continued monitoring to determine the validity of the current trend is necessary.

44. Japan presented a study to test the hypothesis that the setting of encouraged catch reduced directed fishing effort and fishing pressure on NPA, even though the recent annual catch is smaller than the encouraged catch limit level (NPFC-2024-SSC BFME05-WP16). Two approaches were taken to test the hypothesis: records of intended target by observers and cumulative catch plots to specify target species in a "directed CPUE" method. The results demonstrated that the targeting NPA has been avoided and suggested that the implementation of encouraged catch limits might be effective in reducing directed fishing pressure on NPA by discouraging fishers against targeting the fish.

45. The SSC BF-ME developed stock status summaries for SA and NPA, as shown in Annex I, and recommended that the SC Chair present the information in the summaries to the Commission.

Agenda Item 9. Discussion of other proposals on bottom fish management

9.1 Proposal from USA on Emperor Seamount bottom fishery closure

46. The United States presented a proposal for additional temporal and spatial closures to ensure that additional scientific work is completed before authorizing continued bottom fishing activities (NPFC-2024-SSC BFME05-WP18). The United States noted that impact assessments of Members' bottom fishing activities on VMEs have not been updated to consider cumulative impacts or more recent scientific information and management

considerations, that NPFC lacks stock assessments and scientific advice on sustainable levels of fishing activities for NPA and SA, which are believed to be overfished, and that scientific literature highlights the likely presence of VMEs in areas subject to current or potential fishing effort on the Emperor Seamounts. The United States emphasized that these factors are sufficient to consider additional closures to bottom fishing consistent with the international guidance adopted through the United Nations General Assembly and the precautionary approach in the NPFC Convention (Article 3(c)). The United States called for Members that conduct or seek to conduct bottom fishing in the Convention Area to provide updated assessments on bottom fishing activities' significant adverse impacts (SAIs) on VMEs, and for the SC and its subsidiary bodies to review them and recommend whether additional management measures will be required to prevent SAIs on VMEs. It also called for more precautionary management, as well as temporary closures on bottom trawling or appropriate area closures to limit potential impacts on VMEs and promote stock rebuilding.

47. The SSC BF-ME noted that the United States has previously conducted surveys of NPA in the Emperor Seamounts but discontinued them after 1991. The SSC BF-ME noted the value of these surveys and recommended that the United States share the data from the surveys with the SSC BF-ME and resume conducting the surveys, if possible.

48. The SSC BF-ME recommended that the SC recommend that the Commission request Members that conduct or seek to conduct bottom fishing in the Convention Area to provide updated assessments on bottom fishing activities' SAIs on VMEs (following Annex 2 of CMM 2024-05 and CMM 2024-06) and submit them for review by the SC and its subsidiary bodies at or before SC11. The SSC BF-ME recommended that the SC review the updated impact assessments following Annex 3 of CMM 2024-05 and CMM 2024-06 and recommend whether additional management measures will be required to prevent SAIs on VMEs.

49. The SSC BF-ME requested Members to work through the SWG VME to develop a standardized approach for conducting their updated impact assessments.

50. Some Members discussed the adoption of broader temporary closures in the Emperor Seamounts for the protection of VMEs and prevention of SAIs, in addition to two new closures proposed by Japan (paragraph 61). Other Members noted the need for more spatially specific proposals, as well as further evidence to support closures, including identification of VMEs following one of the methods endorsed by the NPFC.

51. Some Members suggested that the NPA and SA fisheries, as well as any fisheries that take NPA and SA as bycatch, should be temporarily closed in order to allow time for the recovery

of these stocks. Other Members pointed out that no working paper outlining such a proposal had been submitted to SSC BF-ME05 and that there was insufficient information or time to consider such a proposal at this meeting.

52. Pew and DSCC presented a literature review that synthesizes research on the environmental vulnerability of and fishery-related impacts to the northwestern Hawaiian Ridge and Emperor Seamount Chain (NPFC-2024-SSC BFME05-OP01). Bottom fisheries cause significant SAIs to VMEs in this area. There is evidence that recovery of deep-sea coral VME taxa may be possible if protections are put into place. Continued trawling will further damage any remnant populations, reducing recovery rates and overall recovery potential. The Emperor Seamounts and Northwestern Hawaiian Ridge have been designated as an Ecologically or Biologically Significant Area (EBSA). A fisheries closure is a tool that could safeguard the ecosystem and aid in its potential recovery as well as the recovery of depleted fish stocks. The DSCC emphasized that in its view the closure of the NPA and SA fisheries as well as the US proposal for the protection of VMEs were consistent with United Nations General Assembly resolutions and should be required under the provisions of Article 3 of the NPFC Convention.

53. On behalf of the Deep-Ocean Stewardship Initiative (DOSI), an observer with the DSCC delegation presented a summary report of Seamount Science Summit – Ecological Insights Workshop (NPFC-2024-SSC BFME05-OP02). The Workshop was held to assess the current understanding of seamount ecosystems, examine current management frameworks, and develop policy recommendations to preserve seamount biodiversity. The Workshop recommended managing seamounts as VMEs, implementing mandatory public reporting for any bycatch of VME indicator taxa regardless of whether the encounter threshold is exceeded, and integrating cumulative impacts, including historical fishing and present and projected climate change and ocean acidification, into the management of impacts from bottom fisheries on seamounts.

Agenda Item 10. Assessment and scientific advice on the management of Vulnerable Marine Ecosystems (VME)

10.1 Review of Members' research and joint research activities on VME

10.1.1 Review of progress towards developing a definition of VMEs

54. Canada presented results from the Joint Canada-USA International Seamount Survey (JCUISS) in 2024 (NPFC-2024-SSC BFME05-IP02). The current study was conducted to validate the existing coral and sponge models, developed during the 2022 study, using an independent data set collected via underwater stereo camera systems and generate new spatially explicit data for constructing improved presence-absence and abundance models. In 2024, only 58 of the 86 stations were occupied on Brown Bear and Cobb Seamounts.

Preliminary image analysis showed that gorgonian corals were present at 71% of the transects occupied. Most of the corals occurred at depths below 400 m and corals were present at most transects on all seamounts below this depth. Coral taxa appeared to consist of Primnoidae, Isididae and other Octocorallians and Antipatharians at deeper depths. Hexactinellid sponges had a similar distribution, but occurred in only 46% of the transects. Hydrocorals were common at shallow depths on Cobb and Corn seamount, while sea whips and sea pens were not common, but found at most depths. Reef-building scleractinians were observed at 8 transects across both years. It should be noted that these data are the result of a cursory look at the 2024 transect data and will change following detailed image analysis.

10.1.2 Modeling VME distribution in the NE Convention Area

55. Canada presented preliminary work to develop distribution models for VME indicator taxa in the Cobb-Eickelberg Seamount Chain (NPFC-2024-SSC BFME05-IP03). Models were successfully constructed and tested using the survey data collected in 2022 and 2024 at Cobb-Eickelberg seamount chain. Overall, the models generally fit the data well. Most tested well against the 2024 data. The models reflected the overall high occurrence rate of VME indicator taxa at deeper depths. More work could be done to incorporate additional variables that might explain some of the variability on a smaller scale. Modeling of density data instead of presence/absence should be a next step in order to identify areas of high density of VME indicator taxa. Eventually, Canada hopes to incorporate the models into the risk assessment for its sablefish fishery.

10.1.3 Update on progress on standardizing an approach to defining SAI

56. There were no updates on standardizing an approach to defining SAIs.

10.1.4 Other research activities on VMEs

57. Japan presented the results of drop-camera surveys conducted on Suiko, Yomei and Ojin Seamounts (NPFC-2024-SSC BFME05-IP06). Japan conducted surveys at 19 stations in the 3 seamounts based on the results of a scientific survey conducted in 2023.

10.1.5 Future and planned research activities by Members on VMEs in 2025

58. The United States explained that it plans to work on the development of distribution models for VME indicator taxa in 2025.

59. Japan explained that it will continue to conduct drop camera surveys in the Emperor Seamounts in 2025.

10.1.6 Proposal for VME closure – Japan

60. Japan presented the results of surveys on the Koko and Yuryaku Seamounts that identified two potential VME sites and mapped their spatial ranges (NPFC-2024-SSC BFME05-WP11 (Rev. 1)). Japan explained that, from 2021 to 2024, it has been following up on US field surveys along the Emperor Seamount Chain (NPFC-2020-SSC BFME01-WP08) by working to identify the dense patches of VME indicator taxa proposed in Baco et al. (2020), map their spatial extent, and determine if these areas are VMEs. Based on the VME identification method reported in NPFC-SSC BFME04-WP11, Japan has been conducting multi-year visual surveys on the R/V Kaiyo-maru on multiple seamounts. In its recent surveys on the Koko and Yuryaku Seamounts, Japan identified two potential VME sites on the northwestern and southeastern parts of Yuryaku Seamount, mapped their spatial range, and recommended the adoption of measures to prevent future SAIs on these sites.

61. The SSC BF-ME appreciated Japan's ongoing research for identifying VMEs in the Emperor Seamounts and recommended that the SC advise the Commission to designate the following areas as VMEs and adopt appropriate measures for their protection:

(a) Northwestern part of Yuryaku Seamount: 32–42.75'N, 172–12.90'E; 32–42.75'N, 172–13.65'E; 32–43.50'N, 172–13.65'E; 32–43.50'N, 172–12.90'E.

(b) Southeastern part of Yuryaku Seamount: 32–37.80'N, 172–18.00'E; 32–37.80'N, 172–18.60'E; 32–38.40'N, 172–18.60'E; 32–38.40'N, 172–18.00'E.

62. The DSCC presented additional research from remote-operated vehicle (ROV) surveys and habitat suitability modeling concerning Yuryaku Seamount (NPFC-2024-SSC BFME05-OP03). The DSCC suggested that this research, as well as historical fishing of precious corals on Yuryaku, indicate there are widespread VMEs of coralliids and reef-forming scleractinians. The DSCC welcomed Japan's proposal for the closure of two areas of Yuryaku Seamount but suggested that these areas do not capture the full extent of VMEs on Yuryaku and called for a full closure of the seamount.

63. The Chair encouraged the DSCC to share data from its surveys in the SWG VME.

64. The United States proposed that, based on the information presented by Japan in NPFC-2024-SSC BFME05-WP11 (Rev. 1) and by the DSCC in NPFC-2024-SSC BFME05-OP03, there is credible scientific basis for closure of the entirety of Yuryaku Seamount. The United States also noted that as Yuryaku is a lightly fished seamount, closure would not have a significant impact on fishing. Some Members disagreed with the United States' proposal, pointing out that VMEs should be designated based on one of the NPFC's endorsed methods, as was done for the closures proposed by Japan, and that the Japanese survey found a number of sites on Yuryaku Seamount that had no VME indicator taxa.

65. The SSC BF-ME noted that the Commission has not provided guidance on how it interprets the precautionary principle in relation to defining VMEs.

10.2 Review of intersessional activities of the SWG VME

66. The SWG VME Lead, Dr. Janelle Curtis (Canada), presented summaries of the 1st and 2nd intersessional meetings of the SWG VME (NPFC-2024-SSC BFME05-IP05) in the 2024 operational year and related email correspondence. Further details are described in Agenda Items 10.2.1–10.2.5 below.

67. The SWG VME Lead also informed the SSC BF-ME of her intention to step down as the Lead due to other responsibilities. Chris Rooper (Canada) volunteered to lead the SWG VME in the coming year until SSC BF-ME06.

10.2.1 Review of the development and implementation of gear specific and taxon specific encounter thresholds for VME indicator taxa in the NPFC Convention Area

68. The SWG VME Lead explained that the SWG VME:
   (a) reviewed the use of data-based methods applied to Japan's indicator taxa bycatch to further refine encounter thresholds that are taxon and gear specific.
   (b) reviewed the availability of Korean bycatch data on VME indicator taxa and noted the potential limitations in refining encounter thresholds using this dataset alone.

69. Japan presented its study to explore a new potential quantitative evaluation method ("data-based method") for the sake of refining encounter bycatch thresholds of VME indicator taxa in the Northwestern Pacific Ocean (NPFC-2024-SSC BFME05-WP13). Japan applied the method to the Japanese bycatch data and evaluated its fit. The recalculated bycatch values were largely overestimated among taxa and fishing gears. Differences in data distribution between fishery and survey data may be the major problem behind the lower model performance. Based on the study, Japan would not recommend refining the current encounter bycatch thresholds in the Northwestern Pacific Ocean using the current data-based method, and believed that further considerations/developments may be required for this task.

10.2.2 Review of progress on data analysis of shared VME indicator data and directions on future joint data analyses

70. The SWG VME Lead explained that the SWG VME shared data and reviewed work done by Canada to use the data for the following objectives:
   (a) learn where VME indicator taxa are known to be present and absent.
   (b) determine where there are elevated densities (hotspots) of VME indicator taxa.

(c) validate VME predictive models against Members' VME observations.

10.2.3 Proposals for revisions to VME indicator species list or nomenclature

71. The SWG VME Lead explained that:

(a) Canada and Japan drafted a translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa.

(b) The SWG VME considered adding hydrocorals to the list of VME indicator taxa but ultimately did not recommend doing so, although some participants expressed concern because of life-history traits that make hydrocorals vulnerable.

72. Japan presented a translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa, including both common and taxonomic names in accordance with the latest taxonomy, for the sake of their usage in discussion and research within the NPFC in the future (NPFC-2024-SSC BFME05-WP10). The table was jointly developed by Canada and Japan. All taxa found by the NPFC Members during their surveys and/or recorded in fishing-bycatch data in the Convention Area to date (as of October 2024) are listed in the table. Japan recommended adding the translation table as one of the Annexes of CMM 2024-05 for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northwestern Pacific Ocean and CMM 2024-06 for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northeastern Pacific Ocean.

73. The SSC BF-ME recommended that the SC endorse the translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa and recommend that the table be added to the digital NPFC VME Taxa Identification Guide online and either added as an annex to CMMs 2024-05 and 2024-06 or that a reference to the table in the online identification guide be added to CMMs 2024-05 and 2024-06.

74. The SSC BF-ME noted that the NPFC has been updating its list of VME indicator taxa and that there is a need to update the NPFC VME Taxa Identification Guide. The SSC BF-ME suggested that the publication of an updated online version of the NPFC VME Taxa Identification Guide should occur regularly, while the publication of an updated print version could occur less frequently, for example every ten years.

10.2.4 Review of potential refinements to quantitative definitions of VME

75. The SWG VME Lead explained that the SWG VME discussed each of the United Nations Food and Agriculture Organization (FAO) criteria for defining VME and agreed to continue to discuss them at SSC BF-ME05.

76. Japan presented a preliminary evaluation of density levels of VME indicator taxa to define VMEs (NPFC-2024-SSC BFME05-WP12). Of the two methods for defining VMEs officially approved by the NPFC, the Japanese-proposed method evaluates the density of VME indicator taxa into three levels (Low, Medium, and High). As the lack of scientific evidence regarding these levels was pointed out by some NPFC Members, Japan examined the adequacy of each density level using the segmented regression method of cumulative distributions for the density of each VME indicator taxa. Japan found that the current density levels are adequate, or even more precautionary, than the calculated results for most taxa.

77. The SSC BF-ME recommended the application of the current density levels used in the Japanese-proposed method from a precautionary point of view.

10.2.5 Other topics on measuring cumulative impacts and SAI

78. The SWG VME Lead explained that Canada and Japan communicated intersessionally by email about data requirements and spatial/temporal resolution for SAI assessment. They agreed that the spatial resolution for SAI assessment should match the spatial extent of VMEs and that evaluation of SAI should be done with the best available temporal scale data that can ensure the spatial resolution required for SAI evaluation. They also noted that ideally, there would be data on the entire historical distribution of fishing so as to be able to see where SAI have likely occurred.

Agenda Item 11. Ecosystem considerations

11.1. Summaries of historical discarded bycatch by Members (Canada, Japan, Korea, Russia)

79. Canada presented a summary of bycatch in its sablefish fishery (NPFC-2024-SSC BFME05-WP07). Bycatch was low in the pot and longline fisheries since 1996. Rockfishes (including targeted rockfishes) were the dominant bycatch. Crabs dominated the invertebrate bycatch (king crabs and tanner crabs). Only two instances of VME indicator taxa were observed in the bycatch data. Canada should continue to monitor impacts of its fisheries on species belonging to the same ecosystem as sablefish.

80. Japan presented a summary and visualization of discarded bycatch recorded by scientific observers on Japanese bottom fishing vessels in the Convention Area (NPFC-2024-SSC BFME05-WP14). Japan generated time series of weight of bycatch for 56 species that are frequently caught and CPUE per year and from 2011 to 2023. The study revealed a number of issues in quantitatively analyzing discard data, specifically differences in taxonomic resolutions in discard records and observer knowledge.

81. Korea presented bycatch information for its bottom fisheries in the Emperor Seamounts (NPFC-2024-SSC BFME05-WP21). During the survey period, discarded bycatch species were recorded in the logbooks of observers onboard bottom trawl vessels in 2014, 2015, 2017, and 2018. The discarded bycatch accounted for less than 5% of the total catch, excluding VME, in all years except 2015. A comparison of CPUE showed that *Epigonus denticulatus* had the highest value, followed by *Xenolepidichthys dalgleishi* and *Hyperoglyphe japonica*. Annual CPUE trends revealed that *Epigonus denticulatus* was dominant in 2014 and 2015, whereas *Xenolepidichthys dalgleishi* had the highest CPUE in 2017 and 2018. However, these results rely solely on observer logbooks rather than expert species identification, making precise annual quantitative comparisons challenging.

82. Russia presented information on its longline fisheries bycatch in the NPFC Convention Area. The weight of bycatch of both fish and invertebrate species was generally low in the Russian fishery. Since the fishery occurs sporadically, data was only available for a few years.

Agenda Item 12. Data collection and reporting

83. The SSC BF-ME agreed to share data for use by the NPFC to support the provision of scientific advice in accordance with the data sharing protocols specified by the SWG NPA-SA and the SWG VME.

84. The SSC BF-ME reaffirmed the importance of ensuring that the use of shared data in the SSC BF-ME and its SWGs complies with the relevant Terms of References (TORs) and the Regulations for Management of Scientific Data and Information.

12.1 Review of the adequacy of the current observer program for the BFME

85. The SSC BF-ME considered the current observer program to be adequate.

86. The SC Chair reminded the SSC BF-ME that the Technical and Compliance Committee (TCC) Chair has asked the SC and its subsidiary bodies to answer the following questions: 1. Are there different needs for the different fisheries regarding data collection? 2. What new data would the SC prioritize/need from a regional observer program (ROP)? 3. What new data would be nice to have (i.e. not needed/priority)? 4. Whether this data could be collected through electronic monitoring (EM)? 5. Whether the observer needs to be a scientist, or can data be collected by a non-scientist?

87. The SSC BF-ME explained that there were different data needs from the different fisheries. However, the SSC BF-ME did not identify any new data that it would prioritize/need from a ROP. The SSC BF-ME agreed that the data needs for the different fisheries are currently being

met. The SSC BF-ME did not identify any clear opportunities for data collection by EM and noted that preliminary studies by Japan suggest that there are difficulties in biological sampling by EM in Japan's bottom fishery but EM may be applicable to other aspects of the observer program. The SSC BF-ME noted that data could be collected by observers without backgrounds as professional scientists, provided the observers are highly trained.

88. Korea requested that Japan consider the possibility of having a Korean scientific observer onboard a Japanese trawl vessel in the Emperor Seamounts as this would provide valuable training opportunities for more accurate scientific data collection, VME taxa and bycatch identification for Korean observers in preparation for any future resumption of the Korean bottom fisheries there. Japan needed more time to consider the request. The SSC BF-ME encouraged Japan and Korea to continue their discussions intersessionally.

12.2 Review of the template for collection of scientific observer data

89. The SSC BF-ME reviewed the template for collection of scientific observer data and determined that no revisions are currently required.

Agenda Item 13. 5-Year (2024-2028) Rolling Work Plan and NPFC Performance Review recommendations

13.1 North Pacific armorhead

13.2 Splendid alfonsino

13.3 Sablefish

13.4 Vulnerable marine ecosystems

13.5 Other ecosystem components

90. The SSC BF-ME reviewed, revised and endorsed the 2024-2028 SSC BF-ME 5-Year Rolling Work Plan (NPFC-2024-SSC BFME05-WP01 (Rev. 1)).

13.6 NPFC Performance Review recommendations

91. The SSC BF-ME reviewed the NPFC Performance Review recommendations that concern bottom fish and marine ecosystems, and reviewed and revised the updated status of responses drafted by the SC Chair and Secretariat (NPFC-2024-SC09-WP01 (Rev. 5)).

Agenda Item 14. Review of CMMs 2024-05 and 2024-06 for bottom fisheries and protection of vulnerable marine ecosystems and CMM 2019-10 for sablefish

92. The SSC BF-ME proposed revisions to CMM 2024-05 as described in Annex J.

93. The SSC BF-ME proposed revisions to CMM 2024-06 as described in Annex K.

Agenda Item 15. Climate change impacts on bottom fisheries and VME

15.1 Discussion of potential impacts of climate change and potential research and advice that the BFME should address

94. Dr. Rice presented a report on pathways for the incorporation of climate change into the work of the NPFC (NPFC-2024-SC09-OP01). The report provided an overview of the literature and data available to evaluate and address climate change related impacts on managed stocks, the Intergovernmental Panel on Climate Change (IPCC) ocean climate change predictions, and potential strategies for the NPFC to integrate climate change into its fisheries management. Addressing the effects of climate change on a basin wide scale should include collaboration among the NPFC, other regional organizations, and NPFC Members' management agencies; enhanced monitoring of fish stocks and bycatch species through an increase in fisheries independent surveys; development of a regional observer program; expansion of fisheries-independent surveys to older individuals for the NPFC priority species surveyed only in the pre-recruit to juvenile stage; and adoption of an iterative program of work that begins with a literature review, prioritization of research, and the creation of a workplan.

Agenda Item 16. Other matters

16.1 Inter-sessional work and priority issues for next meeting

95. The SSC BF-ME discussed intersessional work and agreed priority issues for the next meeting as described under Agenda Item 17.

16.2 Update on PICES WG47 Seamount Ecology

96. The Co-Chair of the North Pacific Marine Science Organization (PICES) Working Group 47 (WG-47) on Ecology of Seamounts, Dr. Janelle Curtis, provided an update on WG-47's (NPFC-2024-SSC BFME05-IP04). In 2024, WG-47 held its annual business meetings in the form of a virtual meeting on 23 September and an in-person meeting in Honolulu, USA, on 31 October, during which it reviewed members' expertise and research interests, reviewed its TOR and anticipated contributions, and planned the WG-47 final report. In 2025, WG-47 plans to write its final report and publish members' primary papers, prepare a fact sheet for WG-47, consider proposing a new Working Group to focus on seamount biodiversity, ecology or conservation, and submit its final report by PICES 2025.

97. The WG-47 Co-Chair suggested that the new Working Group to focus on seamount biodiversity, ecology or conservation could be a joint Working Group with the NPFC. The WG-47 Co-Chairs will invite NPFC Members to provide their input on the proposal prior to submission to PICES.

16.3 FAO request for deep-sea fishing effort data

98. The Science Manager informed the SSC BF-ME that the FAO has submitted a request for deep-sea fishing effort data by position and gear for fisheries using bottom contact gears, at 1^o latitude by 1^o longitude resolution, to develop a global map of spatial bottom fishing effort (NPFC-2024-SC09-OP08). He explained that the request will be discussed at SC09.

16.4 Other issues

99. The SSC BF-ME requested that the Secretariat create a GitHub repository for the SSC BF-ME with two folders for the SWG NPA-SA and the SWG VME.

100. Noting that the vice-Chair position has become vacant, the SSC BF-ME agreed to elect Dr. Kota Sawada (Japan) and Dr. Donald Kobayashi (USA) as the SSC BF-ME vice-Chairs.

Agenda Item 17. Recommendations to the Scientific Committee

101. The SSC BF-ME agreed to:

(a) Task the SWG NPA-SA with the following:
    - i Alternative approaches to NPA assessment
        - a) NPA depletion analysis
        - b) NPA IBM approach
    - ii Integrated model for SA
        - a) Standardize CPUE using directed effort data for SA
        - b) Improve and standardize biological data collection
    - iii Update species summaries (SA and NPA)
    - iv Conduct a literature review on the effects of climate change on SA and NPA

(b) Task the SWG VME to:
    - i Continue working on visual data objectives (Objective 2b and Objective 3)
        - a) Identify high density VME areas on each fished seamount
        - b) Develop new species distribution (presence/absence and abundance) models for VME taxa on all seamounts
    - ii Prepare to update fishing impacts assessment
    - iii Continue to work to develop a synchronized approach for assessing and managing the risk of SAI and determine data requirements and spatial/temporal resolution for SAI assessment
    - iv Develop or research alternative methods to apply to Japan and Korea's indicator taxa bycatch to further refine encounter thresholds that are taxon and gear specific
    - v Consider and explore other methods for identifying VME

vi Discuss value of using fisheries VME indicator taxa bycatch data for managing VME and develop TOR if sharing is necessary

vii Conduct a literature review of connectivity, recruitment and recovery of VME indicator taxa among seamounts

(c) Update species summaries for sablefish, blackspotted and rougheye rockfishes, and skilfish

(d) Elect Dr. Kota Sawada (Japan) and Dr. Donald Kobayashi (USA) as vice-Chairs of the SSC BF-ME and elect Dr. Chris Rooper as Lead of the SWG VME

102. The SSC BF-ME recommended the following to the SC:

(a) Adopt the updated species summaries of NPA (Annex D), SA (Annex E), sablefish (Annex F), blackspotted and rougheye rockfishes (Annex G), and skilfish (Annex H).

(b) Continue to hire external experts to support the work of the SWG NPA-SA.

(c) Task the SC Chair to present the information in the stock status summaries for sablefish, NPA, and SA (Annex I) to the Commission.

(d) Request Members that conduct or seek to conduct bottom fishing in the Convention Area to provide updated assessments on bottom fishing activities' SAIs on VMEs (following CMM 2024-05 and CMM 2024-06 Annex 2) and submit them for review by the SC and its subsidiary bodies at or before SC11.

(e) Endorse the revised CMM 2024-05 (Annex J), including the following updates:

i. Translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa

ii. Two new area closures: (1) Northwestern part of Yuryaku Seamount: 32–42.75'N, 172–12.90'E; 32–42.75'N, 172–13.65'E; 32–43.50'N, 172–13.65'E; 32–43.50'N, 172–12.90'E, and (2) Southeastern part of Yuryaku Seamount: 32–37.80'N, 172–18.00'E; 32–37.80'N, 172–18.60'E; 32–38.40'N, 172–18.60'E; 32–38.40'N, 172–18.00'E.

(f) Endorse the revised CMM 2024-06 (Annex K), including the following update:

i. Translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa

(g) Endorse the updated 2024-2028 SSC BF-ME 5-Year Rolling Work Plan (NPFC-2024-SSC BFME05-WP01 (Rev. 1)).

(h) Consider the SSC BF-ME's comments on the NPFC Performance Review recommendations that concern bottom fishing and marine ecosystems (NPFC-2024-SC09-WP01 (Rev. 5)).

Agenda Item 18. Next meeting

103. The SSC BF-ME recommended holding a 3-day meeting of the SSC BF-ME in 2025 and requested the guidance of the SC and Commission for determining the date, format and location of the meeting.

104. The SSC BF-ME agreed to hold intersessional meetings of the SWG NPA-SA and SWG VME.

Agenda Item 19. Adoption of the Report

105. The report was adopted by consensus.

Agenda Item 20. Close of the Meeting

106. The Chair thanked the participants for their participation and constructive and in-depth discussions.

107. The meeting closed at 11:45 on 11 December 2024, Tokyo time.

Annexes:

Annex A – Agenda
Annex B – List of Documents
Annex C – List of Participants
Annex D – Species summary for North Pacific armorhead
Annex E – Species summary for splendid alfonsino
Annex F – Species summary for sablefish
Annex G – Species summary for blackspotted and rougheye rockfishes
Annex H – Species summary for skilfish
Annex I – Stock status summary for North Pacific armorhead, splendid alfonsino and sablefish
Annex J – Revised CMM 2024-05 Conservation and Management Measure for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northwestern Pacific Ocean
Annex K – Revised CMM 2024-06 Conservation and Management Measure for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northeastern Pacific Ocean

Please refer to the NPFC website for the complete annexes.

14th Meeting of the Small Scientific Committee on Pacific Saury

11-13 and 16 December 2024

Tokyo, Japan (Hybrid)

Meeting Report

Agenda

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- 4.1 Terms of References of the SSC PS
- 4.2 CPUE Standardization Protocol
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Agenda Item 5. Member's fishery status including 2024 fishery
- 5.1 Report from Members including bycatch
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Agenda Item 6. Fishery-independent abundance indices
- 6.1 Survey plans in 2025
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Agenda Item 7. Fishery-dependent abundance indices
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- 8.1 Review of results
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Agenda Item 10. New stock assessment models
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Agenda Item 11. Progress on development and evaluation of a management procedure as a mid-term task
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Agenda Item 12. Development of recommendations to improve conservation and management of

Pacific saury stock

12.1 Application of the adopted HCR to set a TAC in 2025
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Agenda Item 13. Review of the Work Plan of the SSC PS

13.1 Climate related issues
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Agenda Item 14. Other matters

14.1 Observer Program
14.2 Pacific saury species summary update
14.3 Draft agenda, priority issues and timeline for next meeting
14.4 Invited expert
14.5 Other

Agenda Item 15. Consolidated recommendations to the Scientific Committee

Agenda Item 16. Adoption of Report

Agenda Item 17. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 14th Meeting of the Small Scientific Committee on Pacific Saury (SSC PS14) was held in a hybrid format, with participants attending in-person in Tokyo, Japan, or online via WebEx, on 11–13 & 16 December, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and the Republic of Vanuatu. The Deep Sea Conservation Coalition (DSCC), the Ocean Foundation, the North Pacific Marine Science Organization (PICES), and the Pew Charitable Trusts (Pew) attended as observers. Dr. Larry Jacobson participated as an invited expert.

2. The meeting was opened by the SSC PS Chair, Dr. Toshihide Kitakado (Japan). Part of the meeting was chaired by the SSC PS vice-Chair, Dr. Libin Dai (China).

3. Japan welcomed the participants to the meeting. Japan expressed appreciation to the participants for their dedicated efforts to advance the Pacific saury stock assessment and hope that they would enjoy their time in Tokyo.

4. The Science Manager, Dr. Aleksandr Zavolokin, and the Data Coordinator, Mr. Sungkuk Kang, outlined the meeting procedures and logistics.

5. Mr. Alex Meyer was selected as rapporteur.

Agenda Item 2. Adoption of Agenda

6. The agenda was adopted (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Overview of the outcomes of previous NPFC meetings

3.1 SSC PS13

7. The Chair presented the outcomes and recommendations from the SSC PS13 meeting.

Agenda Item 4. Review of the Terms of References of the SSC PS and existing protocols

4.1 Terms of References of the SSC PS

8. The SSC PS reviewed the Terms of References (ToR) of the SSC PS and determined that no revisions are currently necessary.

9. China reiterated the importance of incorporating the effects of climate change and ecosystem considerations on Pacific saury stock assessment and fishery management.

4.2 CPUE Standardization Protocol

10. The SSC PS reviewed the Catch-per-unit-effort (CPUE) Standardization Protocol and determined that no revisions are currently necessary.

4.3 Stock Assessment Protocol

11. The SSC PS reviewed the Stock Assessment Protocol and determined that no revisions are currently necessary, notwithstanding suggested changes elsewhere in the report.

Agenda Item 5. Member's fishery status including 2024 fishery

5.1 Report from Members including bycatch

12. Japan presented its fisheries status (NPFC-2024-SSC PS14-IP07). The fishing season in 2024 started on 10 August. Total landing until the end of November is 38,681 MT, compared to 24,046 MT in 2023. 97 fishing vessels were registered in 2024, 12 fewer than in 2023. The peak of the seasonal catch was at the end of October. Nominal CPUE until the end of November was 1.34, the highest in the most recent 5 years, but still low compared to the 2000s. In August and September, fishing grounds were in the high seas. After October, they were also formed in Japan's Exclusive Economic Zone (EEZ). In 2024, Japan has completed age determination work for August only. In August, over 95% of the fish were age-1 fish. From the partial age determination results, the proportion of age-1 fish is likely to remain high until November.

13. Japan presented bycatch information from the Japanese fisheries up to 2023 (NPFC-2024-SSC PS14-WP04). Pacific saury has been historically caught primarily by the stick-held dip nets in Japan and the catch is quite small in other fisheries. In the Japanese stick-held dip net fisheries targeting Pacific saury, several kinds of pelagic fish have been bycaught, including mackerels, Japanese sardine, Japanese anchovy, and Japanese flying squid, but records of their bycatch are very rare.

14. China presented its fisheries status (NPFC-2024-SSC PS14-IP04). The annual catch decreased continuously after 2018, bottoming out in 2021. Total catch in 2023 was 39,252 MT. In 2024, total catch up to 12 September has been 40,503 MT and a total of 59 vessels have been

operating, an increase of 2 from 2023. As of 12 September, nominal CPUE has been 10.25 MT/vessel/day in 2024, which is the highest in the most recent 5 years. Standardized effort was 4,189 vessel days in 2023. The fishing grounds in 2024 have moved to the north and the west in June and July compared to 2023. A yearly comparison of body length compositions has been conducted from 2014 to 2022.

15. China presented Pacific saury bycatch information from its fisheries in the Northwestern Pacific Ocean (NPFC-2024-SSC PS14-WP14). Pacific saury is primarily harvested by the Chinese stick-held dip nets fisheries operating in the high seas of Northwestern Pacific Ocean, with few catches reported from other fishing operations. While the Chinese stick-held dip nets fisheries primarily target Pacific saury, they also incidentally capture squids, but in minimal quantities that are not officially documented in logbooks. Mackerel fisheries, employing purse seines and trawlers, are the primary fishing activities that historically have caught Pacific saury unintentionally. The proportion of Pacific saury caught by these fisheries is exceedingly small and considered insignificant compared to the targeted species such as chub mackerel and Japanese sardine.

16. Vanuatu presented its fisheries status (NPFC-2024-SSC PS14-IP05). Total annual catch peaked at 8,231 MT in 2018, before dropping to a historical low in 2022. Total catch in 2024 was 2,407 MT. The 2024 fishing season began in mid-August. The number of operating vessels was 4 from 2015 to 2021 and was 3 in 2022. Only 2 vessels were active in 2023. So far in 2024, only two vessels are active. An annual comparison of accumulated catch shows a trend of abundance increasing from September. The level of catch in 2024 started exceeding the level in 2023 from September onwards. The main part of the fishing season is from mid-September to the end of October. An annual comparison of the relative seasonal catch shows that there are usually two peaks in the fishing season. In 2024, the peaks have been around late September and late October. Nominal CPUE in 2024 has been 17.6 MT/day. The main fishing grounds began in the east early in the season, before shifting to the west. Looking at the monthly size box compositions in 2023 (S: less than 6 pcs/kg; 1: 6–9 pcs/kg; 2: 10–12 pcs/kg; 3: 13–15 pcs/kg; 4: 15–18 pcs/kg; 5: more than 19 pcs/kg), there were no size box S catches and the percentage of size box 1 catches was very low.

17. Vanuatu also presented information on its bycatch in the Pacific Saury fishery. The proportion of bycatch, comprising sardines and mackerel, in the Pacific saury fishery is very low compared to Pacific saury catch.

18. Korea presented its fisheries status (NPFC-2024-SSC PS14-IP06). In 2023, total catch was 3,107 MT, with 6 vessels, a historical low, and annual catch had continued to decrease since

2018. In 2024, the total catch was 5,866 MT, some increase compared to 2023. The number of vessels operating has gradually decreased each year from 2022 to 2024 due to the continued low level of Pacific saury catch. In 2024, fishing operations with 5 vessels were from May to November and the highest catch was in September. The nominal CPUE was 4.9 MT/vessel/day in 2024, a slight increase from the previous year. Standardized effort was 2,232 days in 2024, a significant increase from 2023. In 2024, fishing operations took place between 145°E and 170°E longitude. The fishing operations in 2023 and 2024 shifted northward compared to 2022. In 2024, the fork-length range was 25–33 cm, with a mean value of 28.4 cm. It was lowest in June (27.7) and highest in September (28.7). Although there were no significant seasonal differences in size compositions, it appears that larger individuals were caught overall compared to the previous year. By size box composition (S: 18–30cm; M: 23–33cm; L: 27–34cm; 2L: 29–34cm (fork length)) the M ratio was dominant during fishing seasons, except in June.

19. Analysis of bycatch data collected by scientific observers on each vessel in 2021 and 2022 indicated that there were 5 and 6 bycatch species from the Korean stick-held dip net fishery in 2021 and 2022, respectively, resulting in a total of 7 species (Pacific chub mackerel, Japanese sardine, butterfish, neon flying squid, Japanese flying squid, Chinook (king) salmon, boreal clubhook squid) observed over the two years. The bycatch rate of total catch weight was less than 10%.

20. Chinese Taipei presented its fisheries status (NPFC-2024-SSC PS14-IP08). The historical catch reached its highest in 2014. The catch is gradually recovering, starting in 2021. In 2024, fishing vessels began operations in fishing grounds in June, and the catch distribution was noted to be slightly further north than 2023. Although the accumulated catch, 67,279 MT, by the end of the fishing season (12 October) in 2024 is higher than that of the same period of 2023, it is noted that the nominal CPUE is 2.11 MT/haul of 2024, which is higher than the 1.56 MT/haul of 2023. Regarding the size box composition (S: less than 6 pcs/kg; 1: 7–9 pcs/kg; 2: 10–12 pcs/kg; 3: 13–15 pcs/kg; 4: 16–18 pcs/kg; 5: more than 19 pcs/kg), the mode size boxes for Pacific saury caught in each month from June to October were 4, 4, 3, 3, and 3, respectively.

21. In the Chinese Taipei fishery, the bycatch rate accounts for only 0.027% of the total catch and was comprised of mostly mackerel.

22. Russia presented its fisheries status (NPFC-2024-SSC PS14-IP09). Catch increased from 51 MT (from 1 fishing vessel) in 2023 to 814 MT (from 2 fishing vessels) in 2024, 286 MT of which was taken in the Convention Area. Russian vessels did not fish for Pacific saury in 2022.

The highest level of catch was in 2007 and 2014, and the decline in Russian Pacific saury catch is mainly due to reduced fishing effort, with the number of vessels declining to 1 in 2023 and 2 in 2024. Accumulated catch and relative accumulated catch were very low. Seasonal trends were not identified due to the low catch level. Relative seasonal catch typically shows two peaks. In 2024, nominal CPUE increased in 2023 and 2024, both in national waters and in the Convention Area. Russia did not calculate standardized CPUE in 2023 and 2024 due to the low number of vessels. Vessels tried to catch Pacific saury in areas close to the Bering Sea but did not find any commercial fishing grounds with high concentrations of Pacific saury, despite several individuals being found during research surveys. Fishing grounds shifted to the south and the west compared to 2023. No bycatch was recorded in the Pacific saury fishery.

23. The SSC PS requested all Members to report Pacific saury catch separately by gear-type in their annual reporting.

24. The SSC PS noted the value of sharing biological and other data for supporting the work of the SSC PS to assess the Pacific saury stock and provide appropriate management advice, and requested that Members continue to do so.

25. The SSC PS noted that the Japanese biomass survey indicated an increasing trend, and that Members' nominal CPUE and catch also showed an increasing trend, although they remain below historical levels. The SSC PS also noted an increase in age-1 fish in Japan's Pacific saury catch. In addition, the SSC PS noted that fishing activities have generally shifted northward.

26. The Science Manager presented the cumulative catch of Pacific saury in 2020, 2021, 2022, 2023, and 2024. The cumulative catch in 2024 as of 29 November is approximately 145,000 MT compared to 102,000 MT in 2023, 95,000 MT in 2022, 89,000 MT in 2021, and 123,000 MT in 2020.

5.2 Others

27. No other information was presented.

Agenda Item 6. Fishery-independent abundance indices

6.1 Survey plans in 2025

28. Japan informed the SSC PS that it plans to conduct its biomass survey with the usual method in 2025.

29. The SSC PS expressed its appreciation to Japan for conducting the biomass survey in 2024,

as well as for planning to do so again in 2025.

6.2 Recommendations for future work

30. The SSC PS encouraged other Members to conduct research surveys or share data from existing research surveys that could complement the Japanese biomass survey and provide useful information for better understanding the Pacific saury stock.

31. The SSC PS encouraged Japan to conduct further analyses to test the robustness of its Vector Autoregressive Spatio-Temporal Model (VAST) model against spatial changes in the surveyed area, as was suggested at the previous SSC PS13.

Agenda Item 7. Fishery-dependent abundance indices

7.1 Any information

32. Chinese Taipei presented an evaluation of the impacts of environmental variables on spatial density distributions of Pacific saury using spatio-temporal modelling (NPFC-2024-SSC PS14-WP12). Chinese Taipei investigated the influence of environmental factors on Pacific saury distribution in the Northwestern Pacific Ocean using the spatiotemporal modeling framework sdmTMB. Chinese Taipei analyzed Members' combined CPUE data and examined the variation of CPUE in relation to multiple environmental variables through different functional relationships during 2001–2023 using species distribution models. The quadratic function model provided the best fit, explaining 36.1% of variance. Results suggested positive associations with net primary production and a dome-shaped response to sea surface salinity (SSS), peaking around 33 practical salinity unit (PSU). Spatial random effects showed distinct seasonal migration patterns. This preliminary analysis provided insights on how environmental factors and seasonal patterns influence Pacific saury habitats, with potential for model improvement through the exploration of additional environmental variables.

7.2 Recommendations for future work

33. The SSC PS encouraged Chinese Taipei to conduct further analyses of the impacts of environmental factors on spatial density distributions of Pacific saury using spatio-temporal modelling.

Agenda Item 8. Stock assessment using "provisional base models" (BSSPM)

8.1 Review of results

34. China, Japan, and Chinese Taipei updated their stock assessments for the Pacific saury stock in the Northwestern Pacific Ocean using BSSPM and submitted the results to the SSC PS. The details of their updated stock assessments are available in NPFC-2024-SSC PS14-WP10,

NPFC-2024-SSC PS14-WP11, and NPFC-2024-SSC PS14-WP09, respectively.

35. On behalf of the three Members, the Chair presented a comparison of their BSSPM stock assessment results (NPFC-2024-SSC PS14-IP12).

36. The SSC PS reviewed the stock assessments conducted by Members and aggregated the results, recognizing the agreement in trends among them (Annex D).

37. The SSC PS agreed that this year's stock assessment is of a comparable quality to its previous Pacific saury stock assessments and that it represents the best available understanding of the Pacific saury biomass and population dynamics. The SSC PS recognized that there remain sources of uncertainty that should be further investigated, including the prior assumptions, scaling issues, and retrospective patterns. The SSC PS also noted the need to investigate further refinements to the stock assessment model or the input data to improve predictive performance.

38. The SSC PS developed a stock status summary for Pacific saury (NPFC-2024-SSC PS14-IP13) and recommended that the SC Chair present the information in the summary to the Commission.

8.2 Finalization of input values for the adopted HCR

39. The SSC PS agreed to finalize the input values for the adopted HCR based on the aggregated stock assessment results.

8.3 Recommendations for future work

40. The SSC PS should develop approaches to reducing retrospective patterns which affect TAC calculations. The problem does not occur in some cases so modeling approaches with reduced patterns might be used generally. Retrospective corrections used in other fishery management organizations could be applied with some study. This comment applies to any new age structured models as well.

41. The SSC PS noted that it may be difficult to eliminate retrospective patterns completely. Therefore, the SSC PS should ensure that harvest controls used by the Commission are robust to retrospective patterns in assessment results. Retrospective patterns should be considered in MSE analyses.

Agenda Item 9. Biological information on Pacific saury

42. Chinese Taipei presented estimations of the length-length and length-weight relationships of

Pacific Saury in the Northwestern Pacific Ocean (NPFC-2024-SSC PS14-IP02). Neither age nor sex has a significant effect on the length-length and length-weight relationships. The length-length relationships were: fork length = 0.292 + 0.998 knob length (R^2 = 0.999) and standard length = – 0.464 + 0.970 knob length (R^2 = 0.986). The length-weight relationship was: body weight = 3.020×10^{-4} knob length$^{3.788}$ (R^2 = 0.894). The length-weight relationship comparison results indicate that Pacific saury has become thinner from 2004 to 2021.

Agenda Item 10. New stock assessment models

10.1 Review of progress in WG NSAM

43. The Working Group on New Stock Assessment Models for Pacific Saury (WG NSAM) Lead, Dr. Libin Dai, presented a progress report of the three WG NSAM meetings in 2024 (NPFC-2024-SSC PS14-WP08). The focus of these meetings was to explore the potential of applying existing stock assessment packages, primarily Stock Synthesis (SS), and to refine input data and model configurations for enhanced stock management. The WG NSAM made significant progress in refining the SS model by integrating new data, applying time-varying parameters, adjusting age structure and selectivity assumptions, and improving its biological realism. However, several challenges remain, including inconsistencies among the model structure, data, and biology, difficulties in fitting size composition data, strong retrospective patterns, and limited predictive capability. Despite these challenges, the WG NSAM made important strides in model development, which will serve as the foundation for further improvements in future meetings.

44. A summary of the idea exchange between the WG NSAM modelers and biologists in the SSC PS was presented (NPFC-2024-SSC PS14-WP05). The two-way exchange covered Pacific saury biology, including natural mortality and longevity, growth, spawning, data availability, environmental impact (climate change), and sex ratio; the need for better organization of available information on Pacific saury biology and ecology by biologists and better understanding of this information by modelers; and new stock assessment model development.

10.2 Finalization of specification for new stock assessment models

45. The invited expert provided a summary of his progress, ideas, and plans regarding the development of a Stock Synthesis (SS3) model (NPFC-2024-SSC PS14-IP10 (Rev. 1)). The model is close to becoming usable, as biological assumptions are refined. The SS model is a set of almost independent depletion experiments, with one experiment for each annual cohort complicated by high/variable M and growth. There is tension between model complexity and simplicity, both of which seem important. It is important to ensure the assumptions of early life history age and size are realistic. Fit to length composition data is probably crucial but

depends on realistic assumptions about seasonal growth, natural mortality and recruitment/spawning chronology. Information about scale (prior for steepness, recruit variance or Q) is needed. There is also a need for an environmental variable or different steepness to explain recent recruitments. Furthermore, it is necessary to understand/adjust for differences in aging criteria. There is also a need to consider shorter time steps to better estimate growth and catch data / fishing mortality.

46. The SSC PS reviewed the work done by the invited expert, and provided further input and advice on the biological assumptions and model settings. The SSC PS requested the invited expert to continue to develop, in coordination with SSC PS members, the SS model based on the table of model settings and future work described in Annex E.

47. The invited expert presented a request for permission for the WG NSAM to share Pacific saury data with SS3 developer team, consisting of members of the United States National Oceanic and Atmospheric Administration (NOAA), for testing and support (NPFC-2024-SSC PS14-IP11). He emphasized that this would enable more efficient development of the SS model, and that the SS3 developer team has ample experience working with confidential data and ensuring their confidentiality.

48. The SSC PS considered the request and noted the valuable assistance that the SS3 developer team could provide, while also reaffirming the importance of ensuring compliance with the NPFC Data Sharing and Data Security Protocol. The SSC PS noted that one option that would enable both the sharing of data with the SS3 developer team and compliance with the Protocol would be if the United States could name a member(s) of the SS3 developer team to its delegation to the SSC PS, and the SSC PS requested that the United States consider this option. The SSC PS noted that another option would be to share screened or dummy versions of data if those data are confidential, while data that are already publicly available, for example abundance indices in the stock assessment report, could be shared as they are.

49. Chinese Taipei presented an exploratory analysis of spatio-temporal patterns in Pacific saury size composition data (NPFC-2024-SSC PS14-WP13). Chinese Taipei analyzed Pacific saury size composition data from Japan and Chinese Taipei using multivariate regression tree analysis to identify spatial patterns and propose candidate fleet definitions for stock assessment models. Length frequency and commercial category analyses revealed distinct spatial boundaries at 155.5°E for Japanese fleets and 160.3°E for Chinese Taipei fleets. Japanese data showed a mixed length distribution west of 155.5°E and unimodal patterns to the east, while Chinese Taipei data exhibited uniform length frequency patterns across space but heterogeneous commercial size distributions. Both fleets demonstrated consistent seasonal

patterns, with smaller fish distributed in southwestern areas in the fourth season (October–December), and between 163.3°E-170°E. Chinese Taipei recommended using primary boundaries (155.5°E and 160.3°E for Japanese and Chinese Taipei fleets, respectively) to maintain analytical simplicity while effectively capturing size composition heterogeneity for both fleets. These findings suggested the candidate spatially distinct fleet definitions may better account for heterogeneity in catch-at-size data in stock assessment modeling.

50. Japan presented a series of counterfactual simulations to identify which factor, the environment change or fishing, caused the recent and past decrease/increase of Pacific saury population, following up on its previous work that found a temporally-lagged North Pacific Gyre Oscillation (NPGO) index improved the hindcasting skill of Pacific saury recruitment (NPFC-2024-SSC PS14-WP03). Japan simulated how the population dynamics would change without environment factors and/or overfishing by including the identified environment indices into the state-space stock assessment model (SAM) for Pacific saury. The past boom-and-bust cycle disappeared under a constant environment, indicating that the past population dynamics was due to the environmental change. On the other hand, the recent decrease of Pacific saury occurred even under the absence of environment change. This result indicates that, in contrast to the past dynamics, the recent decrease of Pacific saury was caused by both environment change and overfishing.

51. The SSC PS encouraged Japan to conduct further analyses.

10.3 Recommendations for future work

52. The SSC PS tasked the WG NSAM to continue its model development work, including seeking technical support from resources such as the SS3 developer team and continuing to enhance collaboration between modelers and biologists.

53. The SSC PS noted the importance of continuing to build and maintain capacity for model development and analytical work among Members, particularly as the SSC PS transitions to using more complex models for Pacific saury stock assessment.

54. The SSC PS noted that the BSSPM model and any new model should both be run for one or more years as the new model is phased in. It may be advisable to run both models in the future as a matter of policy.

55. The SSC PS encouraged Members to conduct further analyses of spatio-temporal patterns in Pacific saury size composition data.

56. The SSC PS noted that criteria for assigning ages to Pacific saury in the Japanese laboratory and the criteria assumed in stock assessment models are different. It would be better if the criteria used to split the survey data followed the criteria used in the modeling. This applies also to age-length keys and conditional catch-at-length data from Japan and Chinese Taipei.

Agenda Item 11. Progress on development and evaluation of a management procedure as a mid-term task

11.1 Conditioning of operating models (OMs)

57. The Chair summarized the work done to date to complete the development of an interim HCR and previous discussions by the SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS) on the mid-term goal of developing a full management procedure (MP).

58. The SSC PS noted the importance of the development of an age-structured model, such as SS3, for facilitating the development of a full MP, and agreed to endeavor to continue to make good progress on the development of such a model within 2025, but this may be delayed due to remaining challenges. The SSC PS recommended that the SWG MSE PS explore options for beginning the MSE process prior to the completion of the age-structured model.

59. The Chair suggested that further into the future, the SSC PS could consider developing more complicated models to account for migration patterns and differences in space and time in Members' fishing operations.

60. The SSC PS noted that it would be valuable to build the capacity of the SSC PS members in using OpenMSE or other software for MSE analyses.

11.2 Types of management procedures (MPs)

61. Pew presented a review of recent literature on harvest strategies and climate change (NPFC-2024-SSC PS14-OP01). In particular, Pew highlighted the following points. First, harvest strategies are an effective adaptation tool for managing stocks under changing climate conditions. Opportunities and limitations exist to incorporate explicit climate-related environmental factors into management procedures (MPs) and management strategy evaluation (MSE). "Climate-informed" MPs can be designed to include extreme events as "Exceptional Circumstances." "Climate-informed" MPs can account for shifts in geographic distribution across management regimes. There are management options available for data-rich and data-poor fisheries.

11.3 Suggestion to SWG MSE PS06 on timeline

62. No concrete timeline was discussed. The SSC PS noted that after further development of the age-structured model, which will contribute to the construction of the OM, some simple application of the MP will be started.

Agenda Item 12. Development of recommendations to improve conservation and management of Pacific saury stock

12.1 Application of the adopted HCR to set a TAC in 2025

63. The SSC PS used the interim harvest control rule (HCR) for Pacific saury adopted by NPFC in April 2024 under CMM 2024-08 For Pacific Saury to calculate TAC in the 2025 fishing year. Based on inputs from the assessment, $TAC_{2025} = (B_{2024}*F_{MSY}*(B_{2024}/B_{MSY}) = 75{,}741$ mt. Based on the adopted HCR, the TAC will be constrained to change by no more than 10% from one year to the next. The constrained 2025 TAC would be 0.9 x 225,000 = 202,500 mt.

64. The SSC PS noted that the unconstrained TACs calculated from the adopted HCR for 2023 (73,490 metric tons) and 2024 (75,741 metric tons) are quite similar. This issue could persist in future years and complicate stakeholders' expectations about stock rebuilding and status. Improvements to the modeling and HCR approaches, as described elsewhere in this report, are important because they would help avoid such problems.

12.2 Others

65. No other matters were discussed.

Agenda Item 13. Review of the Work Plan of the SSC PS

13.1 Climate related issues

66. China presented a preliminary projection of distribution shift for Pacific saury in the Northwestern Pacific Ocean under climate change (NPFC-2024-SSC PS14-WP07). Pacific saury has been showing signs of shifting northeastward over the last decade. sdmTMB was employed to assess the potential shift under the future climate scenarios of the Intergovernmental Panel on Climate Change's (IPCC's) Shared Socio-economic Pathway (SSP)245 and SSP585. The sdmTMB model was developed based on the CPUE data from China's stick-held dip net fisheries in 2013–2022 and environmental variables including sea surface temperature (SST) and mixed layer depth (MLD), as well as spatial and spatio-temporal random field components. The center of gravity movements manifested conspicuous annual fluctuations during 2013–2022 but the trend is unclear and hard to summarize. The projection results are highly dependent on the assumptions of response curves between environmental variables and CPUE. The influence of environmental variables on CPUE might need to consider time- and/or space-varying nature and extend spatial and temporal coverage to improve its biological realism. Future stock assessment and fishery management for Pacific

saury should consider the spatial dynamics under changing environments.

67. The SSC PS encouraged China to continue to conduct further analyses.

68. Chinese Taipei presented an assessment of the potential impact of climate changes on the habitat of the Pacific saury in the Northwestern Pacific Ocean under various scenarios derived from the IPCC Sixth Assessment Report (AR6) (NPFC-2024-SSC PS14-WP02). SST, SSS, sea surface height, dissolved oxygen, MLD, and net primary productivity were used to estimate the habitat suitability index using the yield density approach. Three periods, namely historical (2001-2014), current (2015-2021), and future (2030, 2050, and 2100) were applied to evaluate the climate change impacts on Pacific saury. The grid number of the saury suitable habitat area (SHA) showed a gradually decreasing trend in the historical period and continuously decreased in the current period. In all future projections, the grid number also exhibited a decreasing trend, reaching its lowest in 2100. The SHA shifted northward from the historical period to the current period and was then distributed around 45–46°N in most future projections except for SSP scenarios 1–1.9 (the lowest emission scenarios). The SHA shifted eastward from the historical to the current period, then moved eastward for SSP scenarios 2–4.5, 3–7.5 and 5–8.5, or westward for the SSP scenarios 1–1.9 and 1–2.6 in the future projections. The climate change pathway for Pacific saury came close to SSP 1–2.6 and SSP 2–4.5.

69. The SSC PS encouraged Chinese Taipei to continue to conduct further analyses.

13.2 Work Plan of the SSC PS

70. The SSC PS reviewed, revised and endorsed the 2024-2028 SSC PS 5-Year Rolling Work Plan (NPFC-2024-SSC PS14-WP01 (Rev. 1)).

13.3 NPFC Performance Review recommendations

71. The SSC PS reviewed the NPFC Performance Review recommendations that concern Pacific saury and the updated status of responses drafted by the SC Chair and the Secretariat (NPFC-2024-SC09-WP01(Rev. 6)).

Agenda Item 14. Other matters

14.1 Observer Program

72. The SSC PS held observer-program-related discussions at SSC PS13. No further discussions were held at this meeting.

14.2 Pacific saury species summary update

73. The SSC PS reviewed the updated species summary of Pacific saury (NPFC-2024-SSC PS14-WP06 (Rev. 1)).

74. The SSC PS recommended that the SC adopt the updated species summary (Annex F).

14.3 Draft agenda, priority issues and timeline for next meeting

75. The SSC PS agreed to hold a 5-day data preparatory meeting in a virtual format in the first week of September 2025 and a stock assessment meeting in December 2025, coinciding with the holding of the SC meeting. In addition, the SSC PS will hold regular virtual intersessional meetings. The WG NSAM will hold quarterly intersessional virtual meetings, in addition to an in-person meeting in early July.

76. The SSC PS agreed on the following priorities for the next meetings in 2025:
    (a) Review standardized CPUE up to 2024.
    (b) Review the Japanese fishery-independent survey results up to 2025.
    (c) Update BSSPM analyses.
    (d) Review progress on development and evaluation of management procedure as a medium-term task.
    (e) Review progress made by the WG NSAM on the development of the SS3 model.
    (f) Review Pacific saury bycatch information from Members.

14.4 Invited expert

77. The SSC PS expressed its appreciation for the continued valuable contributions of the invited expert, Dr. Larry Jacobson. The SSC PS recommended that Dr. Jacobson be invited to the next SSC PS and WG NSAM meetings.

14.5 Other

78. The consultant, Dr. Jihwan Kim, presented the updated results of a study on the spatio-temporal variability of density distribution of Pacific saury and its relationship to basin-scale ocean environmental variability in the North Pacific (NPFC-2024-SSC PS14-IP03 (Rev. 1)). The study built on work that was previously presented at SSC PS13 (NPFC-2024-SSC PS13-IP08 (Rev. 2)) by additionally including catch and effort data from the Vanuatu fisheries, and by analyzing variability in standardized CPUE, rather than nominal CPUE, of Pacific saury. The conclusions of the study remained the same, namely, the distribution of CPUE may be related to the NPGO. Specifically, during the positive NPGO, CPUE is higher near the coast of Japan, while during the negative NPGO phase, it is higher inside the Convention Area.

Agenda Item 15. Consolidated recommendations to the Scientific Committee

79. The SSC PS recommended that the SC:
    (a) Endorse the stock assessment report (Annex D).
    (b) Consider the stock status summary for Pacific saury developed for the presentation purpose for the Commission (NPFC-2024-SSC PS14-IP13).
    (c) Endorse the SSC PS Work Plan (NPFC-2024-SSC PS14-WP01 (Rev. 1)).
    (d) Consider the SSC PS's comments on the NPFC Performance Review recommendations that concern Pacific saury (NPFC-2024-SC09-WP01 (Rev. 6)).
    (e) Allocate funds for the participation and technical support (e.g., development of a new stock assessment model) of an invited expert in the next SSC PS and WG NSAM meetings.
    (f) Adopt the updated species summaries of Pacific saury (Annex F).
    (g) Recommend that the SWG MSE PS explore options for beginning the MSE process prior to the completion of the age-structured model.

Agenda Item 16. Adoption of Report

80. The SSC PS14 Report was adopted by consensus.

Agenda Item 17. Close of the Meeting

81. The Chair thanked the participants for their contributions, the invited expert for his dedicated efforts, Japan for providing the meeting venue, and the Secretariat and the Rapporteur for their support.

82. The SSC PS thanked the Chair for his hard work and leadership.

83. The meeting closed at 16:35 on 16 December 2024, Tokyo time.

Annexes:

Annex A – Agenda
Annex B – List of Documents
Annex C – List of Participants
Annex D – Stock Assessment Report for Pacific Saury
Annex E – Specifications of the Stock Synthesis 3 model
Annex F – Species summary for Pacific saury

Please refer to the NPFC website for the complete annexes.

9th Scientific Committee Meeting

17-20 December 2024

Tokyo, Japan (Hybrid)

Meeting Report

Group photo commemorating the 10th anniversary of the NPFC.
Right: Dr. Joji Morishita (Japan), Chair of SC1-4;
Centre: Dr. Janelle Curtis (Canada), Vice-Chair SC1-4 and Chair of SC5-10; and
Left: Dr. Jie Cao (China), Vice Chair of SC5-10 and incoming SC Chair (SC11-).

Agenda

Agenda Item 1. Opening of the Meeting

- 1.1 Welcome Address and Introductions
- 1.2 Appointment of Rapporteur
- 1.3 Meeting Arrangements

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Key milestones to achieve for NPFC stock assessment of priority species and provision of management advice

- 3.1 A process for reviewing and possibly endorsing domestic stock assessments for priority species

Agenda Item 4. Review of reports and recommendations from the Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA) and the Small Scientific Committees (SSC BF-ME, SSC NFS, and SSC PS)

- 4.1 Technical Working Group on Chub Mackerel Stock Assessment
- 4.2 Small Scientific Committee on Bottom Fish and Marine Ecosystems
- 4.3 Small Scientific Committee on Neon Flying Squid
- 4.4 Small Scientific Committee on Pacific Saury

Agenda Item 5. Update from the Joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS)

Agenda Item 6. Other pelagic priority species

- 6.1 Summary of progress on the remaining three priority species
  - 6.1.1 Blue mackerel (BM)
  - 6.1.2 Japanese flying squid (JFS)
  - 6.1.3 Japanese sardine (JS)
- 6.2 Review of species summaries
- 6.3 Domestic stock assessments of BM, JFS, and JS
- 6.4 Future roles and activities of SWG BM, SWG JFS, and SWG JS

Agenda Item 7. Climate change effects on NPFC's priority species and associated ecosystems

- 7.1 Tools for incorporating climate change considerations into scientific advice
- 7.2 Current knowledge

7.2.1 FAO consultancy report on climate change in the North Pacific

7.3 Ongoing research activities

7.3.1 PICES' Basin-scale Events to Coastal Impacts (BECI) project

7.4 Research priorities and potential scientific projects

Agenda Item 8. Data Collection and Management

8.1 Data Management System

8.1.1 Update on GitHub Plan for NPFC

8.1.2 Evaluation of biological data provision templates

8.1.3 Data inventory

8.1.4 Establishment of a new database to manage and archive scientific data

8.1.5 Potential establishment of a new Small Working Group on Data (SWG Data)

8.1.6 Review of need of GIS maps with catch and effort data for NFS and JS

8.2 NPFC Data Sharing and Data Security Protocol

8.2.1 Revision of Regulations for Management of Scientific Data and Information

8.3 Data needs, data gaps and strategies to fill gaps

8.3.1 Information about species belonging to same ecosystem or dependent/associated with target stocks

8.3.1.1 Historical information about species captured in surveys and/or discarded bycatch from fisheries in the Convention Area

8.3.1.2 Potential impacts on species belonging to same ecosystem or dependent/associated with target stocks

8.3.1.3 Status of current non-target catch, definitions of bycatch applied in other RFMOs, and options for defining bycatch within NPFC

8.3.2 Potential roles of a regional observer program

8.3.2.1 Summary of scientific objectives of an observer program

8.3.2.2 Summary of the kinds of data that would need to be collected and the level of observer coverage that would be needed on fishing vessels to achieve those scientific objectives by gear type

8.3.2.3 Review of template for collecting qualitative information about Members' sampling programs

8.3.2.4 Summary of SC responses to six questions from the TCC Chair

8.3.3 Potential use of NPFC Vessel Monitoring System (VMS) data for scientific purposes

Agenda Item 9. Scientific projects for 2025 and 2026

9.1 Report on capacity building project

9.2 Ongoing/planned projects

9.3 New projects

9.3.1 Potential project(s) for PS, CM, NPA, SA, and NFS

9.3.2 Independent review of stock assessments

9.3.3 Other potential projects

9.4 Review, prioritization and funding of projects

Agenda Item 10. Cooperation with other organizations

10.1 Reports on the joint NPFC-PICES activities since the SC08 meeting, including a report from the PICES Secretariat

10.2 SC representation at scientific meetings

10.2.1 SC representation in the joint ICES-PICES Working Group on Sustainable Pelagic Forage Communities (WG SPF) and SPF symposium in 2026

10.2.2 Report on renewal of the NPFC – PICES Framework for Enhanced Scientific Collaboration in the North Pacific

10.3 Report on cooperation between NPFC and NPAFC

10.4 FAO ABNJ Deep-sea fisheries project

10.5 Partnership with the Fisheries and Resources Monitoring System of FAO (FIRMS)

10.6 Partnership with WCPFC and ISC

10.7 Partnership with SPRFMO

10.8 Cooperation with other organizations

Agenda Item 11. SC Terms of Reference (TOR) and 2024-2028 Research Plan and Work Plan

11.1 Review of the Scientific Committee TOR

11.2 Five-year Research Plan

11.3 Five-year Work Plan

11.4 Progress on addressing NPFC PR recommendations for SC

Agenda Item 12. Other matters

12.1 Coordination between SC and TCC

12.2 Other issues

Agenda Item 13. Advice and recommendations to the Commission

Agenda Item 14. Next meetings of SC and its subsidiary bodies

14.1 Meeting schedule for 2025/2026

14.2 Meeting format and location

Agenda Item 15. Press release

Agenda Item 16. Adoption of the Report

Agenda Item 17. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1.1 Welcome Address and Introductions

1. The 9th Meeting of the Scientific Committee (SC) was held in a hybrid format, with participants attending in-person in Tokyo, Japan, or online via WebEx, on 17–20 December 2024. The meeting was attended by Members from Canada, China, the European Union (EU), Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and Vanuatu. The Deep Sea Conservation Coalition (DSCC), the United Nations Food and Agriculture Organization (FAO), the North Pacific Anadromous Fish Commission (NPAFC), the Ocean Foundation, the Pew Charitable Trusts (Pew), the North Pacific Marine Science Organization (PICES), and the World Wide Fund for Nature (WWF) attended as observers.

2. The meeting was opened by Dr. Janelle Curtis (Canada), who served as the SC Chair. She noted that this operational year marks the 10th anniversary of the NPFC and shared her memories of participating in the NPFC, dating back to the third Preparatory Conference. The Chair highlighted the progress the NPFC's Scientific Committee has made, not only in terms of advancing its conservation and management work, but also in fostering collaboration and strong bonds.

3. The Executive Secretary, Dr. Robert Day, welcomed the participants to the meeting. He reflected on the contributions of past and present members of the Secretariat, including secondees, interns, and consultants, which he too has benefited from, previously as a delegate and now as the Executive Secretary. He noted that the work of the SC and the Commission has continued to expand and expressed the Secretariat's continued commitment to supporting that work.

4. The inaugural SC Chair, Dr. Joji Morishita, looked back on the history of science developments and progress since the 1st SC meeting in 2016. Dr. Morishita expressed his pride to have chaired the inaugural SC meeting and his sincere gratitude for the contributions of all participants. He also offered particular thanks to the first Executive Secretary, Dr. Dae-Yeon Moon, and the Science Manager, Dr. Aleksandr Zavolokin, for their support. Dr. Morishita

explained that, to support the NPFC, as a relatively young regional fisheries management organization (RFMO), he tried to introduce good practices and habits, which have been further enhanced and become well-established under the current SC Chair, and he also endeavored to ensure good communication, noting the importance of ensuring adequate information-sharing and preventing misunderstanding. Having served also as a panel member of the NPFC Performance Review, Dr. Morishita noted that the SC was found to be performing its function very well. At the same time, the work of the SC continues to grow due to the increased number of fish species to be assessed and challenges such as climate change. To navigate this, the SC must continue to set priorities, work efficiently, and review its direction and change course as necessary. More than that, however, the SC's success to date has been due to the presence of excellent scientists, as well as the good division of labor and collaboration among Members, and these will surely be vital for the SC's continued success going forward.

5. At the invitation of the Chair, participants shared their reflections and congratulations on the 10th anniversary of the NPFC's establishment.

1.2 Appointment of Rapporteur

6. Mr. Alex Meyer was selected as the rapporteur.

1.3 Meeting Arrangements

7. The Science Manager and the Data Coordinator, Mr. Sungkuk Kang, outlined the meeting procedures and logistics.

Agenda Item 2. Adoption of Agenda

8. The agenda was adopted without revision (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Key milestones to achieve for NPFC stock assessment of priority species and provision of management advice

3.1 A process for reviewing and possibly endorsing domestic stock assessments for priority species

9. The Co-Leads of the Small Working Group on Milestones (SWG Milestones), Dr. Chris Rooper (Canada) and Ms. Karolina Molla Gazi (EU), presented a report of the SWG Milestones' work in the intersessional period (NPFC-2024-SC09-WP08). The SWG Milestones has:
   (a) developed a general schematic of the current status of the assessment process for priority fish stocks that are currently targeted in the Convention Area, including standardized milestones and indications of species for which a domestic stock assessment incorporating NPFC Convention Area data is in place.

(b) developed a flow chart of proposed pathways for stock assessment and provision of advice to the Commission on NPFC priority species.
(c) developed a flow chart of a proposed pathway for reviewing domestic stock assessments on NPFC priority species without an NPFC stock assessment being completed.
(d) developed a flow chart of current and proposed pathways for data processing, submission and compilation for NPFC stocks.
(e) drafted a Terms of Reference (TOR) for the establishment of a Small Working Group on Data Management (SWG Data).

10. The SC reviewed the recommendations of the SWG Milestones and endorsed the following recommendations:
    (a) Endorse the prioritization of the development of stock assessment activity for stocks without domestic assessments.
    (b) Endorse streamlined stock status reporting to the Commission from the SC consisting of the following:
        i. statements of status for each species (e.g. saury text, NPA text)
        ii. time series of catch, effort for all species (with figures)
        iii. CPUE standardized or biomass (if model) where available
    (c) Review the scientific data workflow proposed by SWG Milestones and prioritize future tasks.
    (d) Consider collecting additional biological data from new surveys and the catch in the Convention Area for species with a stock assessment (both domestic and NPFC)
    (e) Consider assessing the impacts of climate change on the ecosystem as well as stocks and fisheries in the species summary for each species.

11. The SC considered the recommendation that it share data using standardized data sharing templates to streamline the process for the Secretariat to compile and store data and held further discussions under agenda item 8.1.2.

12. The SC endorsed the SWG Milestones' recommendation to implement a stock assessment review cycle for species assessed by the NPFC. However, whereas the SWG Milestone suggested a 5–10-year cycle, one Member suggested a shorter cycle, such as 3–5 years, would be more appropriate, especially for shorter-lived pelagic species.

13. The SC endorsed the SWG Milestones' recommendation to share existing biological data from the fisheries catch in the Convention Area and the adjacent exclusive economic zones (EEZs). However, noting the NPFC Data Sharing and Data Security Protocol and one Member's concerns about sharing its domestic data with another Member for that Member's domestic

stock assessment, the SC agreed that the data should be shared from all Members to the Secretariat and from the Secretariat to the relevant SC subsidiary body with the data-owning Member's permission based on the Regulations for Management of Scientific Data and Information.

14. The SC considered the SWG Milestones' recommendation for the establishment of an SWG Data and held further discussions, including reviewing the proposed terms of reference, under Agenda Item 8.1.5.

15. The SC considered the SWG Milestones' recommendation to endorse a process of using domestic assessments to monitor species for which such assessments exist. The SC agreed that for species for which there is no NPFC stock assessment, it would be useful to receive information from Members' domestic stock assessments for those species. Some Members suggested that the SC could consider the information in such domestic stock assessments, which represents the best available science, and share any relevant stock status information with the Commission, while taking care to make clear that the information is from a single Member's domestic stock assessment and does not represent the SC's endorsed view. Other Members expressed concern that even if precautions were taken when sharing the information with the Commission, it would be misleading and unduly influence the Commission's discussions. Based on the discussion, the SC requested the Commission's guidance on how the SC should provide advice for priority species for which work towards an NPFC stock assessment is not currently being conducted.

16. The EU emphasized that while domestic stock assessments currently represent the best available scientific information, it is essential for scientists from other Members to review these assessments as part of the proper scientific process. To support this work, additional information, as outlined in the SWG Milestones report, is required from the Members who present these domestic stock assessments. Considering the large number of priority species and the limited capacity to carry out stock assessments, which leads to delays in providing advice, it is essential to establish a formal process to integrate the domestic stock assessments into the workflow as an interim way forward.

17. The SC endorsed the meeting report provided by the SWG Milestones (Annex D).

18. The SC agreed that the SWG Milestones has achieved all of its tasks and could therefore be disbanded.

Agenda Item 4. Review of reports and recommendations from the Technical Working Group on

Chub Mackerel Stock Assessment (TWG CMSA) and the Small Scientific Committees (SSC BF-ME, SSC NFS, and SSC PS)

4.1 Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA)

19. The TWG CMSA Chair, Dr. Kazuhiro Oshima (Japan), summarized the outcomes and recommendations of the 8th and 9th TWG CMSA meetings (NPFC-2024-TWG CMSA08-Final Report & NPFC-2024-TWG CMSA09-Final Report). The TWG CMSA Chair also presented the chub mackerel stock assessment report (NPFC-2024-SC09-WP20 (Rev. 1)), which was finalized in the intersessional period following TWG CMSA09.

20. The SC reviewed the recommendations of the TWG CMSA and endorsed the following recommendations:
    (a) adopt the Work Plan of the TWG CMSA (NPFC-2024-TWG CMSA09-WP08 (Rev. 2)).
    (b) adopt the updated species summary for chub mackerel (Annex E).
    (c) consider the TWG CMSA's comments on the NPFC Performance Review recommendations that concern chub mackerel (NPFC-2024-SC09-WP01 (Rev. 1)).
    (d) continue to hire an invited expert to support the TWG CMSA in 2025.

21. Regarding the chub mackerel stock assessment, the TWG CMSA Chair explained that there were discrepancies between a subset of the input data and the footprint data, which were noticed on 6 December, and there was therefore no time for the TWG CMSA to address them. The effect of those input data on the output of the stock assessment is uncertain, and whether or not those sources of uncertainty are influential on the model outputs can only be confirmed when the TWG CMSA updates its stock assessment.

22. The SC endorsed the stock assessment executive summary and stock assessment report (Annex P), as the best available scientific information, while noting that there were discrepancies in the input data, whose impact on the output of the stock assessment is uncertain.

23. Based on the current stock assessment, the SC recommended that the Commission note the status of the chub mackerel stock and management advice in the chub mackerel stock assessment report (Annex P).

24. The SC requested that Members revise their data and submit the revised data to the TWG CMSA by 4 February and that the TWG CMSA re-run the stock assessment and update the model output, ideally before the next TWG CMSA meeting in February, or at least before the Commission meeting in March, if possible. The SC further tasked the TWG CMSA to investigate the source of the discrepancies and to recommend quality assurance and quality control measures to prevent the recurrence of similar issues in the future.

25. The SC endorsed the meeting reports provided by the TWG CMSA.

26. The SC Chair explained that she would report the outcomes of SC09, including the SC's endorsement of the TWG CMSA's stock assessment report and other discussions related to the chub mackerel assessment, to the Commission in March. She noted that the draft meeting report for TWG CMSA10 would become available to Commission Members on 19 March (15 days after the conclusion of said meeting), ahead of the start of the Commission meeting on 24 March, and suggested that if any Members wished to comment on the outcomes of the TWG CMSA10 meeting, such as updated stock assessment outputs if they are available, they could do so upon the circulation of the TWG CMSA10 report.

27. The SC agreed that if the review of the updated stock assessment results were to proceed less smoothly than hoped and take up time set aside for other tasks, such as data preparation for the next stock assessment, that are to be completed during TWG CMSA10, the TWG CMSA would work virtually and intersessionally to complete any outstanding tasks.

4.2 Small Scientific Committee on Bottom Fish and Marine Ecosystems

28. The Chair of the SSC on Bottom Fish and Marine Ecosystems (SSC BF-ME), Dr. Chris Rooper (Canada), summarized the outcomes and recommendations of the 5th SSC BF-ME meeting (NPFC-2024-SSC BFME05-Final Report).

29. The SC reviewed the recommendations of the SSC BF-ME and endorsed the following recommendations:

(a) Adopt the updated species summaries of North Pacific armorhead (NPA) (Annex F), splendid alfonsino (SA) (Annex G), sablefish (Annex H), blackspotted and rougheye rockfishes (Annex I), and skilfish (Annex J).

(b) Continue to hire external experts to support the work of the Small Working Group on NPA and SA (SWG NPA-SA).

(c) Request Members that conduct or seek to conduct bottom fishing in the Convention Area to provide updated assessments on bottom fishing activities' SAIs on VMEs (following CMM 2024-05 and CMM 2024-06 Annex 2) and submit them for review by the SC and its subsidiary bodies at or before SC11.

(d) Endorse the revised CMM 2024-05 (Annex R), including the following updates:

    i. Translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa.

    ii. Two new area closures: (1) Northwestern part of Yuryaku Seamount: 32–42.75'N, 172–12.90'E; 32–42.75'N, 172–13.65'E; 32–43.50'N, 172–13.65'E;

32–43.50’N, 172–12.90’E, and (2) Southeastern part of Yuryaku Seamount: 32–37.80’N, 172–18.00’E; 32–37.80’N, 172–18.60’E; 32–38.40’N, 172–18.60’E; 32–38.40’N, 172–18.00’E.

(e) Endorse the revised CMM 2024-06 (Annex S), including the following update:
    i. Translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa.

(f) Endorse the updated 2024-2028 SSC BF-ME 5-Year Rolling Work Plan (NPFC-2024-SSC BFME05-WP01 (Rev. 1)).

(g) Consider the SSC BF-ME’s comments on the NPFC Performance Review recommendations that concern bottom fishing and marine ecosystems (NPFC-2024-SC09-WP01 (Rev. 5)).

30. The SC endorsed the report provided by the SSC BF-ME.

31. The United States made a statement regarding its ongoing call for closure of the bottom fisheries on the Emperor Seamount Chain and Northwestern Hawaiian Ridge. The United States reiterated concerns regarding protection of VMEs and stock status of target fish stocks. The statement included specific discussion of Yuryaku VMEs and highlighted the deleterious implications for the SA stock from new findings by SWG NPA-SA for the bottom trawl gear selection curve. The full US statement is attached as Annex T.

32. The DSCC stated that the US proposal is an opportunity for the NPFC to effectively align its science and management measures with the provisions of the UN General Assembly resolutions related to the management of bottom fisheries and protection of VMEs, as well as growing political commitments to halt and reverse biodiversity loss and enhance the resilience and recovery of deep-sea ecosystems as called for in Sustainable Development Goals, the Kunming-Montreal Global Biodiversity Framework and other instruments, and encouraged NPFC Members to support the US proposal.

33. The Deep-sea Fisheries (DSF) Project (FAO) informed the SC that it plans to work with the International Council for the Exploration of the Sea (ICES) to advance stock assessment work on data-limited species and suggested that it could collaborate with the NPFC to support stock assessments of NPA and SA.

4.3 Small Scientific Committee on Neon Flying Squid

34. The Chair of the SSC on Neon Flying Squid (SSC NFS), Dr. Luoliang Xu (China), summarized the outcomes and recommendations of the 1st SSC NFS meetings (NPFC-2024-SSC NFS01-Final Report).

35. The SC reviewed the recommendations of the SSC NFS and endorsed the following recommendations:
    (a) endorse the Terms of Reference for the Small Scientific Committee on Neon Flying Squid (Annex U).
    (b) endorse the CPUE Standardization Protocol for neon flying squid (Annex V).
    (c) endorse the Stock Assessment Protocol for neon flying squid (Annex W).
    (d) adopt the Work Plan of the SSC NFS (NPFC-2024-SSC NFS01-WP04 (Rev. 1)).
    (e) adopt the updated species summary for neon flying squid (Annex K).
    (f) consider the SSC NFS's comments on the NPFC Performance Review recommendations that concern neon flying squid (NPFC-2024-SC09-WP01 (Rev. 2)).
    (g) continue to hire an invited expert in 2025 to support the SSC NFS during its meetings and conduct other work to support the SSC NFS as appropriate.

36. The SC endorsed the report provided by the SSC NFS.

4.4 Small Scientific Committee on Pacific Saury

37. The Chair of the SSC on Pacific Saury (SSC PS), Dr. Toshihide Kitakado (Japan), summarized the outcomes and recommendations of the 13th and 14th SSC PS meetings (NPFC-2024-SSC PS13-Final Report, NPFC-2024-SSC PS14-Final Report).

38. The SC reviewed the recommendations of the SSC PS and endorsed the following recommendations:
    (a) Endorse the stock assessment report (Annex Q).
    (b) Endorse the SSC PS Work Plan (NPFC-2024-SSC PS14-WP01 (Rev. 1)).
    (c) Consider the SSC PS's comments on the NPFC Performance Review recommendations that concern Pacific saury (NPFC-2024-SC09-WP01 (Rev. 6)).
    (d) Allocate funds for the participation and technical support (e.g., development of a new stock assessment model (NSAM)) of an invited expert in the next SSC PS and Working Group on NSAM meetings.
    (e) Adopt the updated species summary of Pacific saury (Annex L).
    (f) Recommend that the SWG MSE PS explore options for beginning the MSE process prior to the completion of the age-structured model.

39. As recommended by the SSC PS, the SC considered the stock summary slide for Pacific saury suggested for inclusion in the SC Chair's report to the Commission. The SC agreed that a one-slide summary would be inadequate for conveying all the key stock status information and management advice for Pacific Saury.

40. The SC endorsed the reports provided by the SSC PS.

Agenda Item 5. Update from the Joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS)

41. The co-Chair of the joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific saury (SWG MSE PS), Dr. Toshihide Kitakado (Japan), informed participants about progress of the SWG MSE PS including the outcomes and recommendations of its 5th meeting (NPFC-2024-SWG MSE PS05-Final Report).

42. The SC Chair emphasized the SSC PS's and the SC's commitment to supporting the work of the SWG MSE PS.

Agenda Item 6. Other pelagic priority species

6.1 Summary of progress on the remaining three priority species

43. The Leads of the Small Working Groups (SWGs) on Japanese sardine (JS), Japanese flying squid (JFS), and blue mackerel (BM) reported on the SWGs' intersessional activities, including the relevant outcomes of the 1st and 2nd joint virtual meetings of these SWGs in 2024, in the respective sections below (6.1.1 – 6.1.3). Detailed summaries of the joint SWG meetings are available in NPFC-2024-SC09-RP01 (1st meeting) and NPFC-2024-SC09-RP02 (2nd meeting).

6.1.1 Blue mackerel

44. The SWG BM Lead, Dr. Kazunari Higashiguchi (Japan), reported on the SWG BM's intersessional activities (NPFC-2024-SC09-IP03). The SWG BM has met twice intersessionally (as part of the joint meetings of the SWGs on JFS, JS, and BM). It reviewed methods for distinguishing BM and chub mackerel, reviewed the feasibility of calculating the proportion of BM and chub mackerel catch by gear and sharing data to that end, updated Members' estimated catch and effort, updated the species summary, shared and reviewed data on BM fork length and age, updated the ratio of BM in the mackerel catch by China and Japan, and reviewed the catch-per-unit-effort (CPUE) standardization for indices used in Japan's domestic stock assessment.

45. The SC noted the importance of having separate BM and chub mackerel catch information for the stock assessments of the two species, which are conducted separately. The SC agreed to add review of Members' methodologies for calculating the ratio of BM and chub mackerel catch to the TWG CMSA's workplan. The SC recommended that the Commission request Members to provide data on BM biological data and the ratio of BM to chub mackerel catch to the Secretariat for analyses in accordance with the agreed work plan.

6.1.2 Japanese flying squid

46. The SWG JFS Lead, Dr. Hajime Matsui (Japan), reported on the SWG JFS' intersessional activities (NPFC-2024-SC09-IP07). The SWG JFS has met twice intersessionally (as part of the joint meetings of the SWGs on JFS, JS, and BM). It updated Members' catch and effort data, reviewed a report from China on the availability of more biological information from the nursery area for Japan's domestic stock assessment, reviewed a monitoring program of the oceanographic conditions in the JFS spawning grounds conducted by Japan, reviewed a study on the effect of fisheries management when the stock-recruitment (SR) relationship could change with a regime shift (regime-based fisheries management), considered whether there is a need for a regional observer program (ROP) in the Convention Area to collect data on JFS and/or bycatch species from squid jigging fisheries and concluded that there is not, reviewed the CPUE standardization for the winter spawning stock of JFS that is used in Japan's domestic stock assessment, and updated the species summary.

47. The SC recommended that the Commission request Members to provide JFS biological data to the Secretariat for analyses in accordance with the agreed work plan.

6.1.3 Japanese sardine

48. The SWG JS Lead, Dr. Chris Rooper (Canada), reported on the intersessional activities of the SWG JS (NPFC-2024-SC09-WP14). The SWG JS has met twice intersessionally (as part of the joint meetings of the SWGs on JFS, JS, and BM). It updated Members' catch and effort data, shared and reviewed Members' size frequency (age), length-weight relationships and other relevant data, incorporated data from China and Russia into the JS stock assessment conducted by Japan, shared code for the Virtual Population Analysis (VPA) assessment model used for JS via GitHub, reviewed Japan's CPUE standardization for the JS assessment and developed a workplan to conduct similar standardization for other Members fisheries for JS in 2025, and updated the species summary.

49. The SC recommended that the Commission request Members to provide JS biological data to the Secretariat for analyses in accordance with the agreed work plan.

6.2 Review of species summaries

50. The SC reviewed, further revised, and endorsed the updated species summary document for JFS (Annex M).

51. The SC reviewed, further revised, and endorsed the updated species summary document for JS (Annex N).

52. The SC reviewed, further revised and endorsed the updated species summary document for BM (Annex O).

6.3 Domestic stock assessments of BM, JFS, and JS

53. The SC invited Members to share the results of their domestic stock assessments for the purpose of information sharing. The SC observed, but did not formally review, domestic stock assessments of BM, JFS, and JS.

54. Japan presented its domestic stock assessment of BM (NPFC-2024-SC09-IP04 (Rev. 1)). The assessment is conducted using tuned VPA. The MSY-based reference points were estimated from the stochastic simulation from the Ricker stock-recruitment relationship. Biomass and SSB have been decreasing since 2011 and recruitment has been greatly lower than the expectation from the stock-recruitment relationship. The current status is that overfishing is occurring ($F > F_{MSY}$) and that the stock is overfished ($SSB < SSB_{MSY}$). As future work, it is necessary to reflect actual age composition outside the Japanese EEZ.

55. Japan presented its domestic stock assessment of JS (NPFC-2024-SC09-IP05 (Rev. 1)). The assessment is conducted using a tuned VPA with ridge penalty. The MSY-based reference points were estimated from the stochastic simulation from the normal-regime SR relationship of the hockey stick function. In 2023, estimated total biomass was 4.24 million mt and SSB was 2.79 million. SSB exceeded SSB_{MSY}. The current F (F2021–2023) exceeded F_{MSY}. As future work, it is necessary to reflect actual age composition outside the Japanese EEZ, and more consideration should be given to consider how to treat regimes for future projection and biological reference points.

56. Japan presented its domestic stock assessment of JFS (NPFC-2024-SC09-IP06). The estimated total biomass of the winter spawning stock decreased largely from 2015 to 2016 and has remained at a low level since then. The MSY-based reference points were estimated by a stochastic simulation with the Beverton-Holt stock-recruitment relationship. In 2023, the estimated total biomass was 101,000 mt and SSB was 41,000 mt. SSB was lower than SSB_{MSY} and F was lower than F_{MSY} in 2022. In terms of future issues, there are uncertainties such as using fixed q value in the current stock assessment method. State-space Assessment Model Used for IKA (SAMUIKA) or Stochastic Surplus Production Model in Continuous Time (SPiCT) could be potential stock assessment models for future domestic JFS stock assessments.

57. The SC expressed its appreciation to Japan for conducting domestic stock assessments of BM,

JFS, and JS and sharing them with the SC.

6.4 Future roles and activities of SWG BM, SWG JFS, and SWG JS

58. The SC developed a table of future tasks for the SWG BM, SWG JFS, and the SWG JS (Annex X).

Agenda Item 7. Climate change effects on NPFC's priority species and associated ecosystems

7.1 Tools for incorporating climate change considerations into scientific advice

59. Dr. Tom Carruthers (Ocean Foundation) presented the results of robustness trials for climate-ready management procedures (MPs) for multiple species of highly migratory tunas, sharks and billfish (NPFC-2024-SC09-OP02). The research on climate change impacts on pelagic fish species was reviewed and organized into the theoretical linkages between climatological processes, oceanographic properties affecting habitat, mechanisms of impact and relevant operating model dynamics. The most cited impacts on species biology, ecology and behavior relate to spatial distribution, larval survival, range contraction, adult survival and condition factor. Since few quantitative predictions of climate impacts have been made with regard to these aspects, expert judgement was used to specify proof-of-concept climate tests that included moderate and extreme cases of declining somatic growth, condition factor, adult survival and mean recruitment strength. A range of MP archetypes were tested for their robustness to the climate scenarios including empirical index-target and index-ratio MPs, and model-based stock assessment MPs with and without harvest control rules. MPs that specified effort controls or size limits provided more robust conservation performance for climate tests than their equivalents providing catch advice. Stock assessment model MPs providing catch advice were substantially more robust to declining survival and recruitment when also incorporating a harvest control rule. In general, the most challenging climate tests involved declining survival and recruitment with these leading to larger impacts on yield outcomes than biomass outcomes.

60. Dr. Carruthers presented performance metrics of climate robustness for Atlantic bigeye tuna (NPFC-2024-SC09-OP03). Operating models were developed from the 2021 stock assessment of bigeye tuna. Four types of projected climate impact were simulated: increasing natural mortality rate, and decreases in recruitment strength, somatic growth and condition factor. Defining a robustness threshold enabled the calculation of a performance metric of climate robustness that was calculated for each type of climate impact for three MP archetypes and two MP derivatives. Shifting the focus away from establishing defensible climate forecasts and towards climate robustness performance metrics provided information that could support the selection of MPs accounting for climate impacts. It was not necessary to know the exact type of impact or the exact level of forecasted impact to identify an MP that clearly and

consistently outperformed the rest in terms of climate robustness.

7.2 Current knowledge

61. Pew presented a review of recent literature on harvest strategies and climate change (NPFC-2024-SC09-OP04). In particular, Pew highlighted the following points. First, harvest strategies are an effective adaptation tool for managing stocks under changing climate conditions. Opportunities and limitations exist to incorporate explicit climate-related environmental factors into MPs and MSE. “Climate-informed” MPs can be designed to include extreme events as “Exceptional Circumstances.” “Climate-informed” MPs can account for shifts in geographic distribution across management regimes. There are management options available for data-rich and data-poor fisheries.

7.2.1 FAO consultancy report on climate change in the North Pacific

62. Dr. Joel Rice (DSF Project, FAO) presented a report on pathways for the incorporation of climate change into the work of the NPFC (NPFC-2024-SC09-OP01). The report provided an overview of the literature and data available to evaluate and address climate change related impacts on managed stocks, the Intergovernmental Panel on Climate Change (IPCC) ocean climate change predictions, and potential strategies for the NPFC to integrate climate change into its fisheries management. Addressing the effects of climate change on a basin wide scale should include collaboration among the NPFC, other regional organizations, and NPFC Members’ management agencies; enhanced monitoring of fish stocks and bycatch species through an increase in fisheries independent surveys; development of a regional observer program; expansion of fisheries-independent surveys to older individuals for the NPFC priority species surveyed only in the pre-recruit to juvenile stage; and adoption of an iterative program of work that begins with a literature review, prioritization of research, and the creation of a workplan.

63. The SC Chair pointed out that besides understanding the impacts of climate change on fisheries resources and related ecosystems, the NPFC’s Resolution on Climate Change calls on Members to also consider climate change impacts on fishing activities and the associated socio-economics. She noted that the SC’s scientific activities are therefore likely to become much broader and expressed her hope that Members and observers will continue to work collaboratively on even more challenging issues in the future.

7.3 Ongoing research activities

7.3.1 PICES’ Basin-scale Events to Coastal Impacts (BECI) project

64. The Science Director of the Basin-scale Events to Coastal Impacts (BECI) project, Dr. Kathryn Berry, provided an overview and an update on the project (NPFC-2024-SC09-OP10). BECI

aims to unite knowledge from around the North Pacific to help NPFC and other organizations across the North Pacific use climate and ocean science in their decision-making. It plans to connect these organizations with environmental data they can use by linking existing monitoring networks and databases; providing tools to help make climate-informed decisions, such as by building and/or enhancing practical analysis tools and exploring artificial intelligence applications to support analysis and prediction; sharing best practices that work; and supporting collaboration across organizations. As next steps, BECI hopes to provide its Science Plan, scheduled for completion in April 2025, to the NPFC SC for broader distribution, establish a process to send a questionnaire to NPFC SC subsidiary bodies, and develop a plan for continued communication with the NPFC.

7.4 Research priorities and potential scientific projects

65. The SC discussed potential research activities to address climate change effects on NPFC's priority species and associated ecosystems, such as monitoring changes in the distribution or productivity of stocks, and how the health of one stock might affect the health of another associated stock.

Agenda Item 8. Data Collection and Management

66. The EU explained its proposal for the establishment of a Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data (NPFC-2024-SC09-WP15), which is aimed at ensuring consistency, fostering collaboration, and supporting quality control and validation. The EU sought views and suggestions from the SC on its proposal.

67. The SC considered the EU's proposal. Members provided feedback and agreed to provide any additional feedback before COM09. The EU thanked Members for their input and expressed its intention to refine its proposal based on Members' comments.

8.1 Data Management System

68. The Data Coordinator reported on the progress in the development of the SC-related data management system (NPFC-2024-SC09-IP01). The Data Coordinator explained updates to the Members Home, Significant dates/Events, Pacific Saury Weekly Report, Chub Mackerel Monthly/Weekly Report, Collaboration, Annual reports sections, as well as updates to the NPFC GIS Maps for Pacific saury catch and effort data, and for bottom fishing with combined, gear-specific footprints.

69. The SC expressed its appreciation to the Secretariat for continuing to update and enhance the NPFC data management system.

70. The SC suggested that the Secretariat explore options for further enhancing the data management system as follows:
    (a) Enable Members to download annual reports in machine-readable formats.
    (b) Restore/improve Members' access to the NPFC GeoServer.

8.1.1 Update on GitHub Plan for NPFC

71. The Data Coordinator explained that the Secretariat has successfully applied for the GitHub Nonprofit Plan and is now coordinating with GitHub to complete the transition. Currently, 7 Members, an invited expert and the Secretariat are active within this group. The Data Coordinator has prepared a user manual in cooperation with Members outlining basic steps for utilizing the Git Repository (https://www.npfc.int/git-repository-user-manual). This manual can be continuously enhanced based on Members' feedback. Currently, the Repository supports the TWG CMSA and SSC BF-ME, with plans to expand support to other groups, such as SSC PS, upon Member request. The Secretariat will continue to enhance the data management systems to support efficient and secure data handling for NPFC Members. Members' feedback and comments are greatly appreciated and will guide future improvements.

8.1.2 Evaluation of biological data provision templates

72. The Science Manager explained that the SC's subsidiary bodies have not reported any specific issues with the use of the draft biological data provision templates.

73. The SC agreed to work intersessionally towards finalizing the biological data provision templates (NPFC-2023-SC08-IP13 (Rev. 1)) by SC10 and using the templates from the 2026 operational year.

8.1.3 Data inventory

74. The Science Manager and the Data Coordinator presented a data inventory policy, a data inventory table summarizing information about data submitted by Members, and suggestions for improving data management/organization (NPFC-2024-SC09-WP03).

75. The SC endorsed the data inventory policy and the data inventory table structure.

8.1.4 Establishment of a new database to manage and archive scientific data

76. The Science Manager presented a concept paper for the establishment of a database to manage and archive scientific data (NPFC-2024-SC09-WP06). He explained that the purpose of the database would be to efficiently and securely store, organize, and retrieve scientific data to facilitate data analyses and modeling, that it would house data for stock assessment (catch,

effort, size, age, maturity, etc.), VME identification, assessment of significant adverse impact (SAI) on marine ecosystems, annual catch and effort statistics and other data which may be shared in future to fulfill the SC's functions, and that it would be maintained and developed by the Secretariat, with support from a contractor(s). The Science Manager invited the SC to provide feedback on the database's business requirements, the data flow, and next steps, and explained that the development of the database would be an iterative process with regular opportunities for Members to provide their input.

77. The SC endorsed the development of a database to manage and archive scientific data, noting that it would facilitate more efficient management and use of scientific data for scientific analyses.

8.1.5 Potential establishment of a new Small Working Group on Data (SWG Data)

78. The SC considered the proposal for the establishment of a new SWG Data. The SC noted the value of having a dedicated body addressing data matters that are common to all subsidiary groups, in particular the immediate need for such a body to provide guidance to the Secretariat on the planned development of a database to manage and archive scientific data. The SC also noted that further discussions are needed on various aspects of the proposed SWG Data, including the potential long-term scope of the SWG, its membership, and the roles of Members, Secretariat and a contractor(s).

79. The SC agreed to establish the SWG Data for 1 year, and to task it to focus primarily on assisting the Secretariat in creating a data management system, including data collection, verification, reporting, storing, and dissemination, and secondarily to identify the scope of the SWG Data, its membership and roles of Members, Secretariat and a contractor(s). The SC elected Ms. Karolina Molla Gazi (EU) to serve as the Lead of the SWG Data. The SC agreed that the SWG Data will meet virtually.

80. The SC revised the draft TOR accordingly and endorsed the TOR for the SWG Data (Annex Y).

81. The SC agreed to initially appoint Chris Rooper (Canada), Qiuyun Ma (China), Karolina Molla Gazi (EU), Kazuhiro Oshima (Japan), Hyejin Song (Korea), Vladimir Kulik (Russia), Wen-Bin Huang (Chinese Taipei), Don Kobayashi (United States), and Mei-Chin Juan (Vanuatu) as members and/or contact persons of the SWG Data. The SC requested the Chairs of the SSCs and the TWG CMSA to nominate members of the SWG Data from their respective groups.

82. The SC agreed to discuss the potential continued need for, and long-term role of, the SWG Data at SC10.

8.1.6 Review of need of GIS maps with catch and effort data for NFS and JS

83. The consultant, Dr. Jihwan Kim, presented an updated prototype Neon Flying Squid map (NPFC-2024-SC09-WP13). The proposed map will resemble the Pacific Saury Catch and Effort Map, incorporating detailed data on catch volume, fishing effort, and spatial distribution. It will also include datasets on Extended Reconstructed Sea Surface Temperature (ERSST) sourced from National Oceanic and Atmospheric Administration (NOAA). Key features of the map will enable users to filter data by Member, year, and month, and to view catch or effort data alongside sea surface temperature (SST) and SST anomalies. Additionally, the "All Members Catch" feature will allow access to aggregated catch data from all Members contributing to catch, namely China, Japan, Korea, Chinese Taipei, and Vanuatu.

84. The SC noted the value of the Neon Flying Squid map for visualizing the distribution of NFS catch and effort and recommended that the Commission consider making the maps available on the NPFC website, at a spatial resolution of 1^{o} x 1^{o} and a monthly temporal resolution, with access restricted to NPFC Members only.

85. The SC noted that Dr. Kim's term as a consultant to the NPFC Secretariat will end in March and expressed their appreciation for his contributions to the NPFC.

8.2 NPFC Data Sharing and Data Security Protocol

8.2.1 Revision of Regulations for Management of Scientific Data and Information

86. The Science Manager presented proposed revisions to the Regulations for Management of Scientific Data and Information to align it with the revisions to the NPFC Data Sharing and Data Security Protocol that were adopted by the Commission at its 8th meeting (NPFC-2024-SC09-WP07).

87. The SC made further revisions to the Regulations for Management of Scientific Data and Information to reflect the need to seek the formal approval of data providers prior to conducting analyses outside the activities outlined in the work plans of the SC's subsidiary bodies or prior to publishing data in an external publication (NPFC-2024-SC09-WP07 (Rev. 2)).

88. The SC endorsed the proposed revisions (Annex Z).

8.3 Data needs, data gaps, and strategies to fill gaps

8.3.1 Information about species belonging to same ecosystem or dependent/associated with target stocks

89. The Chair reminded the SC that, in accordance with Article 10, paragraph 4(d) of the NPFC Convention, one of the functions of the SC shall be to assess the impacts of fishing activities on fisheries resources and species belonging to the same ecosystem or dependent upon or associated with the target stocks. She further pointed out that the NPFC Performance Review Panel has recommended that the SC and Technical and Compliance Committee (TCC) should coordinate formal efforts to collect standardized data and validate bycatch of associated and dependent species, and that the SC develop strategies that address the lack of information needed to take ecosystem considerations into account for NPFC pelagic fisheries in the Convention Area, and include these in the SC's Research Plan, data collection procedures and obligations. The Chair also reminded the SC that SC06 agreed that the establishment of an observer program in the NPFC Convention Area would facilitate the collection of more data for such non-targeted species, as well as for NPFC priority species.

90. China presented an overview of 2024 Chinese survey by its fishery research vessel "Song Hang" in the NPFC Convention Area (NPFC-2024-SC09-WP21). In 2024, the Chinese fishery research vessel Song Hang embarked on its fourth year of scientific surveys by Shanghai Ocean University in the Northwest Pacific Ocean. The improved survey program in 2024 continues to cover fisheries resources, larval and juvenile stages of marine species, plankton, and environmental surveys, consistent with previous years. Research included studies of distribution by acoustic surveys, biodiversity by environmental-DNA, feeding ecology, ecosystem modelling, and plastic analysis. The data collected will continue to contribute to a deeper understanding of the marine ecosystem within the NPFC Convention Area.

91. The SC expressed its appreciation for the valuable survey conducted by China and encouraged it to continue conducting such surveys.

92. China informed the SC that it will conduct the survey again in 2025 and expressed its intention to share the detailed data from its surveys with the relevant SC subsidiary bodies.

93. China presented the results of a study on the ecosystem structure and trophodynamics in the Kuroshio-Oyashio Extension (KOE) area (NPFC-2024-SC09-WP22). China analyzed the trophic structure and characteristics of this pelagic ecosystem using the Ecopath model and data collected in its 2023 KOE fishery resources survey. The overall ecosystem characteristics suggested that the KOE pelagic ecosystem was at a low level of maturity and vulnerable to disturbance from external activities. Given the significance of the KOE pelagic ecosystem, China suggested conducting long-term and stable ecosystem-level surveys and assessments.

It also recommended conducting collaborative work with more biological data to enhance the quality of the KOE pelagic ecosystem model.

8.3.1.1 Historical information about species captured in surveys and/or discarded bycatch from fisheries in the Convention Area

94. China presented a summary of the species in the Northwest Pacific ecosystem based on Chinese surveys and bycatch from Chinese fisheries (NPFC-2024-SC09-WP23). China operates four kinds of fleet in the Convention Area, i.e. stick-held dip net, squid-jigging fishery, pelagic trawl net and light purse seine. The first three gears are highly selective, with few bycatch. Pacific saury is the only catch species in the stick-held dip net fishery, with low bycatch of squid. Most of the catch from the squid-jigging fishery is neon flying squid, with a low incidental catch of Japanese flying squid catch. The catch of pelagic trawl fishery includes chub mackerel, Japanese sardine and blue mackerel, with low incidental catch of Pacific saury. In the light purse fishery, the main recorded catch species are chub mackerel, blue mackerel, and Japanese sardine. Other species, such as neon flying squid, Pacific saury, Japanese anchovy, lanternfish, tuna, sharks, marine mammals, were incidentally captured and in some cases released based on the CMMs of the NPFC or other RFMOs.

95. The SC requested that Members continue to share historical information about species captured in surveys and/or discarded bycatch from fisheries in the Convention Area and that the SSCs and the TWG CMSA continue to discuss such information.

8.3.1.2 Potential impacts on species belonging to same ecosystem or dependent/associated with target stocks

96. The SC noted that none of its subsidiary bodies reported assessments on potential impacts on species belonging to the same ecosystem or dependent/associated with target stocks.

97. The DSF Project (FAO) informed the SC that it will hold a Symposium on Applying the Ecosystem Approach to Fisheries Management in Areas Beyond National Jurisdiction (ABNJ) on 11–13 March 2025 and that the Symposium will include discussion of ways in which information from research surveys and fisheries can answer questions about effects on associated/dependent species.

8.3.1.3 Status of current non-target catch, definitions of bycatch applied in other RFMOs, and options for defining bycatch within NPFC

98. The SC Chair explained that the Science Manager has held discussions with the Secretariats of other RFMOs and heard that other RFMOs have found it similarly challenging to develop a unified definition of bycatch for both scientific and compliance purposes.

99. The SC requested Members to consider potential definitions of bycatch for use within the SC and present their proposals to SC10.

100. The FAO suggested that for the SC, it may be more useful to consider catch as a whole and to subdivide that into retained or discarded catch, rather than trying to define and distinguish between targeted catch and bycatch.

8.3.2 Potential roles of a regional observer program

8.3.2.1 Summary of scientific objectives of an observer program

101. The SC agreed that, in accordance with Article 10, paragraph 4(d), one of the scientific objectives of an observer program could be to assess the impacts of fishing activities on fisheries resources and species belonging to the same ecosystem or dependent upon or associated with the target stocks.

8.3.2.2 Summary of the kinds of data that would need to be collected and the level of observer coverage that would be needed on fishing vessels to achieve those scientific objectives by gear type

102. The SC noted that it needs a more in-depth understanding of the characteristics of Members' fleets and the implications for feasible observer coverages and for appropriate coverage levels to ensure that reliable and representative data are collected. The SC agreed that it is too early for the SC to be able to provide scientifically defensible input on the kinds of data that would need to be collected from a regional observer program and the level of observer coverage that would be needed on fishing vessels by gear type. The SC agreed to continue to discuss this matter at the SC and its subsidiary bodies.

103. The WWF called for the need for observer data to ensure transparency in fishery and improve the accuracy of stock assessments, and also called for the need for the SC to discuss the appropriate level of observer coverage from a purely scientific perspective, rather than from a feasibility perspective.

8.3.2.3 Review of template for collecting qualitative information about Members' sampling programs

104. The Science Manager presented a report on the existing observer programs of NPFC Members and those of other RFMOs (NPFC-2024-SC09-WP02 (Rev. 4)). The report summarized Members' existing observer programs for pelagic and bottom fisheries in the Convention Area, including observer training programs and observer program design and coverage, observer data collected, and how collected data are reported and stored; the observer programs of the

Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and other general RFMOs, namely Northwest Atlantic Fisheries Organization (NAFO), North East Atlantic Fisheries Commission (NEAFC), South East Atlantic Fisheries Organisation (SEAFO), Southern Indian Ocean Fisheries Agreement (SIOFA), South Pacific Regional Fisheries Management Organisation (SPRFMO); and the FAO Guidelines for Developing an At-Sea Fishery Observer Programme.

8.3.2.4 Summary of SC responses to six questions from the TCC Chair

105. The SC reviewed and updated the responses by its subsidiary bodies to the following questions from the TCC Chair to the SC and its subsidiary bodies: 1. Are there different needs for the different fisheries regarding data collection? 2. What new data would the SC prioritize/need from a ROP? 3. What new data would be nice to have (i.e. not needed/priority)? 4. Whether this data could be collected through electronic monitoring (EM)? 5. Whether the observer needs to be a scientist, or can data be collected by a non-scientist? The SC requested that the SC Chair forward the responses (NPFC-2024-SC09-WP04 (Rev. 4)) to the TCC Chair.

106. The SC agreed to continue to discuss data needs and data gaps that could be filled by a regional observer program and inform the TCC about progress in these developments.

8.3.3 Potential use of NPFC Vessel Monitoring System (VMS) data for scientific purposes

107. The Science Manager presented a summary of the VMS data from NPFC Members and potential ways in which the SC could use these data (NPFC-2024-SC09-WP05). Members have provided data from January 2022 to the present at a temporal resolution of 1-hour interval for each vessel and a spatial resolution of 0.001° latitude and longitude. China, Korea, Russia, Chinese Taipei, and Vanuatu also optionally provide vessel heading and speed data. The Science Manager suggested that the SC could use VMS data for estimating distribution of fishing effort, examining tradeoffs, modelling fishing effort for use in stock assessment and fisheries management activities, estimating abundance indices or undertaking stock assessments, evaluating the impact of management changes, planning for and implementing scientific programs, and validating logbook data. VMS reporting could also be enhanced for more comprehensive analysis, including by classifying vessel activities into distinct types; integrating the catch data from logbooks, including identification of target species; and collecting sea surface temperature (SST) and salinity (SSS) data from vessel uptake, and making these data available to the Global Ocean Observing System.

108. The SC noted that currently, NPFC does not have specific regulations for the use of VMS data for scientific purposes.

Agenda Item 9. Scientific projects for 2025 and 2026

9.1 Report on capacity building project

109. Ms. Jhen Hsu (Chinese Taipei) reported on her training supported by the SC capacity building project. Ms. Hsu attended a 5-day ICES training course, held in Nanaimo, British Columbia, Canada, on advanced stock assessment with R Template Model Builder (RTMB). RTMB is a new package that provides a native R interface for a subset of TMB, which is particularly popular in fisheries science and ecological modeling because it can efficiently handle state-space models, mix-effects models, complex likelihood functions, and large datasets with multiple random effects. RTMB provides all necessary components for building complex spatio-temporal models and all materials from the RTMB training course have been made available on the NPFC collaboration website.

110. The SC thanked Ms. Hsu for providing the capacity building materials to the SC and wished her well on her PhD defense.

9.2 Ongoing/planned projects

9.3 New projects

9.3.1 Potential project(s) for PS, CM, NPA, SA, and NFS

9.3.2 Independent review of stock assessments

9.3.3 Other potential projects

9.4 Review, prioritization and funding of projects

111. The Science Manager presented a draft list of scientific projects that were discussed during the meetings of the SC and its subsidiary bodies (NPFC-2024-SC09-WP09).

112. The SC reviewed the list of proposed scientific projects, finalized the list, and endorsed it for consideration by the Commission (Annex AA).

113. The SC agreed to continue to discuss the development of an independent peer review process for its stock assessments and to discuss adjustments to its stock assessment and management cycles for individual species to accommodate such an independent peer review process.

Agenda Item 10. Cooperation with other organizations

10.1 Reports on the joint NPFC-PICES activities since the SC08 meeting, including a report from the PICES Secretariat

114. The Executive Secretary of the North Pacific Marine Science Organization (PICES), Dr. Sonia Batten, reported on recent and upcoming planned joint activities between PICES and NPFC (NPFC-2024-SC09-OP07), highlighting the following:

(a) Participation by NPFC and PICES representatives at each other's annual meetings

(b) Renewal of the NPFC-PICES Collaborative Framework
(c) NPFC representation to the joint PICES/ICES Working Group (WG) on Small Pelagic Fish (WG 43)
(d) NPFC representation to the joint PICES/ICES Working Group on Sustainable Pelagic Forage Communities (WG 53)
(e) Involvement by some NPFC scientists, including the Chair of the NPFC SC, in the Working Group on the Ecology of Seamounts (WG 47)
(f) Potential for collaboration on the BECI project
(g) PICES External Review Process

10.2 SC representation at PICES meetings

115. The SC Chair reported on her attendance of the PICES 2024 Annual Meeting (NPFC-2024-SC09-IP08). The SC Chair participated in the Seamount Science Summit – Ecological Insights Workshop, which was convened by the Deep Ocean Stewardship Initiative (DOSI), participated in the Biological Oceanography Committee and Science Board meetings, co-chaired the Working Group on Ecology of Seamounts (WG47), and worked on renewal of the PICES-NPFC Framework for Enhanced Scientific Collaboration in the North Pacific Ocean for another 5 years, which has since been endorsed by PICES.

116. The SC Chair proposed revisions to the NPFC's method to evaluate and rank nominations for SC representatives to be financially supported to participate in relevant scientific meetings, including opportunities that build capacity to undertake scientific analyses (NPFC-2024-SC09-WP18).

117. The SC endorsed the proposed revisions (Annex BB).

10.2.1 SC representation in the Joint ICES-PICES Working Group on Sustainable Pelagic Forage Communities (WG SPF) and SPF symposium in 2026

118. Dr. Chris Rooper (Canada) provided an overview of the Joint ICES-PICES Working Group on Sustainable Pelagic Forage Communities (WG SPF) and its activities (NPFC-2024-SC09-IP09). The WG SPF aims to foster international and interdisciplinary collaboration; assess recent progress on understanding fluctuations of forage species; identify, prioritize, and recommend research to forecast ecosystem responses; recommend strategies to improve ecosystem-based management; and describe how climate change and other anthropogenic factors impact forage species. It consists of two Task Forces, one on Ecological Process Knowledge and the other on Translating Process Knowledge. The WG SPF also plans to hold a Small Pelagic Fishes Symposium on May 4–8, 2026, in La Paz, Mexico. NPFC scientists can get involved by participating in planning, submit a session/workshop/abstract, join an

activity group, or contribute to reviewing papers/analyses. The NPFC has also been invited to co-sponsor the Symposium.

119. The official invitation for NPFC to co-sponsor the PICES/ICES/FAO International Symposium, titled "Navigating Changes in Small Pelagic Fish and Forage Communities: Climate, Ecosystems, and Sustainable Fisheries," to be convened on May 4–8, 2026, in La Paz, Mexico is detailed in NPFC-2024-SC09-OP06.

10.2.2 Report on renewal of the NPFC – PICES Framework for Enhanced Scientific Collaboration in the North Pacific

120. The SC Chair presented a proposal for the renewal of the NPFC – PICES Framework for Enhanced Scientific Collaboration in the North Pacific for 2025–2029 (NPFC-2024-SC09-WP19), prepared by the SC Chair, the SC vice-Chair (Dr. Jie Cao), and the NPFC and PICES Secretariats. She explained that the updated framework updates the scientific interests and objectives of each organization; identifies potential areas and specific topics for scientific cooperation; identifies potential collaborative methods (such as representation at each other's meetings, holding of joint workshops or symposia, development of a Memorandum of Understanding (MOU) between the organizations or other formal agreements, establishment of joint working groups); clarifies practical steps to advance the cooperative activities identified above; and provides advice on how information produced by PICES can be shared and applied in the NPFC.

121. The SC endorsed the proposal and recommended that the Commission adopt the renewed NPFC – PICES Framework for Enhanced Scientific Collaboration in the North Pacific for 2025–2029.

10.3 Report on cooperation between NPFC and NPAFC

122. The NPAFC Executive Director, Mr. Yoshikiyo Kondo, reported the updates in the implementation of the Five-year Work Plan. In the report, Mr. Kondo expressed NPAFC's appreciation for NPFC's contribution to the North Pacific high seas Expedition in 2022 and NPFC's adoption of its CMM on anadromous fish at COM08 in 2024. He explained NPAFC's proposal to co-host a joint workshop on interaction between fisheries and anadromous fish in the North Pacific high seas as a potential further collaboration between the NPFC and NPAFC, and asked for the SC's support for holding such a joint workshop. He emphasized NPAFC's strong and continued willingness to cooperate with the NPFC.

123. The SC reviewed the concept paper on a Joint NPAFC/NPFC workshop on interactions between fisheries and anadromous fish in the North Pacific high seas. The SC endorsed the

scientific elements of the paper, while noting that most of the workshop topics concern matters of compliance, and recommended that the NPAFC also present the concept paper to the TCC.

124. The SC reviewed and had no feedback on the Terms of Reference for an NPAFC/NPFC Data Sharing Platform.

10.4 FAO ABNJ Deep-sea fisheries project

125. Dr. Tony Thompson, the DSF Project (FAO), presented an update on its activities (NPFC-2024-SC09-OP12). In its current phase, the DSF Project's objective is to ensure deep-sea fisheries are managed under an ecosystems-based approach, focusing on data-limited stocks, deepwater sharks, and VMEs. The DSF Project has been working on the application of the precautionary approach to deep-sea fisheries, engagement with deep-sea fishing industry, assessing data-limited deep-sea stocks, assessing impacts of deep-sea fisheries on deepwater sharks, VME identification methods, support for observers, RFMO websites and outreach messaging, new technologies, and climate change work. The DSF Project will also hold a Symposium on Applying the Ecosystem Approach to Fisheries Management in Areas Beyond National Jurisdiction on 11–13 March 2025.

126. The DSF Project (FAO) made a request for fishing effort data by position and gear for fisheries using bottom contact gears, at 1^{o} latitude by 1^{o} longitude resolution, for the last 5 years to develop a global map of spatial bottom fishing effort (NPFC-2024-SC09-OP08). The DSF Project explained that if there are restrictions on the release of data at the scales outlined above, it would welcome advice on alternative approaches to spatial and/or temporal aggregation that would facilitate data being available for this mapping exercise.

127. The SC requested Members to consult with data owners on whether the NPFC could share the requested data with the DSF Project in the aggregated form that was previously prepared by the SSC BF-ME. If the data owners give their approval for the sharing of the data, the SC requested Members to collaborate with the DSF Project on the data-sharing process intersessionally.

128. The SC Chair reminded the SC that CMM 2023-14 On Sharks requires all Members to annually report all shark catches, to the extent possible by species, and that at SC08, the DSF Project (FAO) offered to help the NPFC to develop a key for shark identification.

129. The DSF Project (FAO) presented an overview of preliminary identification keys for deepwater sharks and a review of deepwater shark species known or likely to occur within the NPFC Convention Area (NPFC-2024-SC09-OP05). The DSF Project is also working on a

new style of digital identification key with enhanced usability. FAO will produce a pelagic shark identification key in 2025.

130. The SC expressed its appreciation for the preliminary identification keys and expressed interest in collaborating with the FAO on working on a new style of digital identification key.

10.5 Partnership with the Fisheries and Resources Monitoring System of FAO (FIRMS)

131. Mr. Aureliano Gentile (FAO) provided an update on FIRMS' support for the FAO SOFIA Status of Stocks Index (SoSI) biennial updates and the partnership between FIRMS and NPFC (NPFC-2024-SC09-OP11). Mr. Gentile provided an overview of the objectives and outcomes of the Ninth FIRMS Technical Working Group (TWG9) Meeting that was held on 10–13 December 2024. He also outlined the requirements and good practices for responding to the biennial FIRMS data call for the SoSI updates. Mr. Gentile also reported the status of progress in conducting the SoSI biennial updates, including the new SoSI methodology and data flow, and shared other news from FIRMS.

10.6 Partnership with WCPFC and ISC

132. The Executive Secretary informed the SC that, following the 8th meeting of the Commission, the NPFC has concluded Memoranda of Understanding with the Western and Central Pacific Fisheries Commission (WCPFC) and the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC), which will facilitate consultation, cooperation, and collaboration between the NPFC and these two organizations.

10.7 Partnership with SPRFMO

133. The Science Manager presented the Memorandum of Understanding concluded between the NPFC and the SPRFMO in 2023 and outlined the objectives of the SPRFMO. He also reported on his recent attendance of the 12th meeting of the SPRFMO Scientific Committee, which was a valuable opportunity to learn more about SPRFMO and its good practices, as well as to identify areas of similarity and common interest between NPFC and SPRFMO.

10.8 Cooperation with other organizations

134. There was no discussion of cooperation with any other organizations.

Agenda Item 11. SC Terms of Reference (TOR) and 2024-2028 Research Plan and Work Plan

11.1 Review of the Scientific Committee TOR

135. The SC reviewed its TOR and determined that no revisions are currently needed.

11.2 Five-year Research Plan

11.3 Five-year Work Plan

136. The SC reviewed its 2024-2028 Five-Year Rolling Research Plan (NPFC-2024-SC09-WP16) and Work Plan (NPFC-2024-SC09-WP17). The Research Plan and the Work Plan of the SC and its subsidiary bodies are attached as Annex CC.

137. Members agreed to share data for scientific activities in accordance with the agreed SC Research Plan and SC Work Plan. The SC tasked the Secretariat to send an official call for data to Members.

11.4 Progress on addressing NPFC PR recommendations for SC

138. The SC's progress on addressing the NPFC Performance Review Panel's recommendations, as well as the SC's ongoing and future actions, are described in NPFC-2024-SC09-WP01 (Rev. 6).

Agenda Item 12. Other matters

12.1 Coordination between SC and TCC

139. The Compliance Manager, Ms. Judy Dwyer, provided an update on coordination between the TCC and the SC (NPFC-2024-SC09-IP11). The TCC has been developing a proposal for a regional transshipment observer program, clarifying language for CMM 2024-03 on Transshipment to ensure all transshipped fish products are recorded by species, addressing technical issues to establish a process for entry and exit notification in the Convention Area, addressing technical issues for incorporating aerial surveillance in high seas boarding and inspections (HSBIs) and updating HSBI support material on the NPFC website, and gathering data from Members to assist in the establishment of the "historic existing level" that is referenced in a number of CMMs.

140. Based on the discussions above, the SC identifies the following as matters for coordination between the SC and the TCC and requests the Secretariat to inform the TCC that:
    (a) The SC proposed revisions to CMM 2024-05 (Annex R) for two new bottom fishing area closures to protect VMEs on Yuryaku Seamount.
    (b) The SC responded to the questions from the TCC Chair (NPFC-2024-SC09-WP04 (Rev. 4)).
    (c) The SC will continue to discuss data needs and data gaps that could be filled by a regional observer program and inform the TCC about progress in these developments.

12.2 Other issues

141. The SC discussed and agreed on a process for considering the extension of the contracts of invited experts as follows:

(a) In advance of the completion of an invited expert's term, the Secretariat will circulate a survey among Members in which they will assess the performance of the invited expert and express any concerns they may have.
(b) The Secretariat will compile Members' responses to the survey and share them with all Members.
(c) At the meeting of the SC or relevant subsidiary body that is to consider the extension of the contract of the invited expert, the invited expert and observers will be asked to leave the room, and the SC or relevant subsidiary body will hold its deliberations and make its recommendation.

142. As the scope of the scientific activities of the NPFC continues and will continue to grow, as illustrated by the intensive schedule of scientific meetings and projects planned for 2025–2026, the SC recognized the potential need to provide greater support for the Secretariat in the future, for example through the enhanced capacity of the Secretariat itself, support from external suppliers, in-kind assistance from Members, or streamlining its workplan.

143. The FAO informed the SC that the Secretariats at other RFMOs have experienced similar challenges handling intensive meeting and project schedules. The FAO suggested it would be worthwhile for the NPFC Secretariat to discuss these common challenges with other RFMO Secretariats, for example through the Regional Fishery Body Secretariats' Network (RSN).

144. The SC noted that occasionally documents submitted to the SC may require significant modification after being reviewed by the SC. In these rare cases, the SC requests the Commission to allow submission of revised documents which are to be approved intersessionally by the SC up to 14 days prior to Commission meetings.

Agenda Item 13. Advice and recommendations to the Commission

145. Based on the recommendations from its SSCs, the TWG CMSA, and its SWGs, the SC recommends that the Commission:
(a) Endorse the SC's 5-Year Rolling Research and Work Plans (Annex CC).
(b) Endorse the proposed scientific projects (Annex AA).
(c) Consider the species summary documents and stock status summaries as reference information when taking decisions on the management of the NPFC priority species (Annexes E–Q).
(d) Consider the scientific meetings schedule for 2025-2026 as described in paragraph 149.

Stock Assessment Process

(e) Endorse the prioritization of the development of stock assessment activity for stocks without domestic assessments.

(f) Endorse streamlined stock status reporting to the Commission from the SC consisting of the following:
   i. statements of status for each species (e.g. saury text, NPA text)
   ii. time series of catch, effort for all species (with pictures)
   iii. CPUE standardized or biomass (if model) where available

(g) Provide guidance on how the SC should provide advice for priority species for which work towards an NPFC stock assessment is not currently being conducted.

(h) Allow submission of revised documents which are to be approved intersessionally by the SC up to 14 days prior to Commission meetings, as described in paragraph 144.

Chub Mackerel

(i) Endorse the stock assessment executive summary and stock assessment report (Annex P) as the best available scientific information, while noting that there were discrepancies in the input data, whose impact on the output of the stock assessment is uncertain.

(j) Note, based on the current stock assessment, the status of the chub mackerel stock and management advice in the chub mackerel stock assessment.

(k) Note that Members will revise their data and submit the revised data to the TWG CMSA by 4 February and that the TWG CMSA will re-run the stock assessment and update the model output, ideally before the next TWG CMSA meeting in February, or at least before the Commission meeting in March, if possible.

(l) Allocate funds for the participation of an invited expert in the TWG CMSA meetings to support the TWG CMSA (Scientific Projects, Annex AA).

Bottom Fish and Marine Ecosystems

(m) Allocate funds for the participation of invited experts in the SWG NPA-SA meetings to support the SA and NPA stock assessments (Scientific Projects, Annex AA).

(n) Request Members that conduct or seek to conduct bottom fishing in the Convention Area to provide updated assessments on bottom fishing activities' SAIs on VMEs (following CMM 2024-05 and CMM 2024-06 Annex 2) and submit them for review by the SC and its subsidiary bodies at or before SC11.

(o) Endorse proposed revisions to CMM 2024-05 (Annex R), including the following updates:
   i. Translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa
   ii. Two new bottom fishing area closures: (1) Northwestern part of Yuryaku Seamount: 32–42.75'N, 172–12.90'E; 32–42.75'N, 172–13.65'E; 32–43.50'N, 172–13.65'E; 32–43.50'N, 172–12.90'E, and (2) Southeastern part of Yuryaku Seamount: 32–37.80'N, 172–18.00'E; 32–37.80'N, 172–18.60'E; 32–38.40'N, 172–18.60'E; 32–38.40'N, 172–18.00'E.

(p) Endorse proposed revisions to CMM 2024-06 (Annex S), including the following update:

i. Translation table of VME indicator corals between common and scientific names of cold-water corals among the VME indicator taxa

Neon Flying Squid

(q) Allocate funds for the participation of an invited expert in the SSC NFS meetings to support the SSC NFS (Scientific Projects, Annex AA).

(r) Task the Secretariat to make the maps available on the NPFC website, at a spatial resolution of 1^o x 1^o and a monthly temporal resolution for catch and effort, with access restricted to NPFC Members only.

Pacific Saury

(s) Endorse the stock assessment report (Annex Q).

(t) Allocate funds for the participation and technical support (e.g., development of a new stock assessment model) of an invited expert(s) in the next SSC PS and WG NSAM meetings (Scientific Projects, Annex AA)

Other Priority Species

(u) Request Members to provide JS biological data, JFS biological data, and BM biological data and the ratio of BM to chub mackerel catch to the Secretariat for analyses in accordance with the agreed work plan.

Data Sharing

(v) Adopt the revised Regulations for Management of Scientific Data and Information (Annex Z).

(w) Update the data shared by the SC, TWG CMSA, SSC BF-ME, SSC PS, SSC NFS in accordance with their work plans.

Cooperation with Other Organizations

(x) Adopt the renewed NPFC – PICES Framework for Enhanced Scientific Collaboration in the North Pacific for 2025–2029.

Performance Review

(y) Note that the SC reviewed the Performance Review recommendations and provided comments on SC-related recommendations (NPFC-2024-SC09-WP01 (Rev. 6)).

146. In relation to other tasks for the SC specified in CMMs and the Convention, the SC informs the Commission of the following:

(a) The SC agreed to disband the SWG Milestones as the SWG has achieved all of its tasks.

Stock Assessment Process

(b) The SC agreed to implement a stock assessment review cycle for species assessed by the NPFC.

Chub Mackerel

(c) The SC tasked the TWG CMSA to investigate the source of the discrepancies in the input data in the stock assessment and to recommend quality assurance and quality control

measures to prevent the recurrence of similar issues in the future.

Neon Flying Squid

(d) The SC endorsed the Terms of Reference for the Small Scientific Committee on Neon Flying Squid (Annex U).

(e) The SC endorsed the CPUE Standardization Protocol for neon flying squid (Annex V).

(f) The SC endorsed the Stock assessment protocol for neon flying squid (Annex W).

Pacific Saury

(g) The SC noted the plans of the WG NSAM to continue developing Stock Synthesis model.

Data Collection and Sharing

(h) The SC endorsed the scientific data inventory policy and the data inventory table structure.

(i) The SC endorsed the development of a database to manage and archive scientific data.

(j) The SC agreed to share existing biological data from the fisheries catch in the Convention Area and the adjacent EEZs with the Secretariat.

(k) The SC endorsed Terms of Reference for an SWG Data (Annex Y), agreed to establish the SWG Data for 1 year, and agreed to elect Ms. Karolina Molla Gazi (EU) as the SWG Data Lead.

(l) The SC agreed that it is too early for the SC to be able to provide scientifically defensible input on the kinds of data that would need to be collected from a regional observer program and the level of observer coverage that would be needed on fishing vessels by gear type and agreed to continue to discuss this matter at the SC and its subsidiary bodies.

Climate Change

(m) The SC noted the analyses on climate change effects conducted by the SSC PS.

(n) The SC reviewed the report on potential climate change impacts on NPFC stocks funded by the FAO DSF project.

Cooperation with Other Organizations

(o) The SC re-affirmed its support for the development and implementation of the BECI project, which will provide valuable information for the SC's analyses, including those related to climate change.

(p) The SC continued to cooperate with the FAO DSF Project on the development of a shark ID guide.

(q) The SC revised its policy on evaluation and ranking of nominations for SC representatives to be financially supported to participate in relevant scientific meetings.

147. The SC recommends that the SWG MSE PS:

(a) Explore options for beginning the MSE process prior to the completion of the age-structured model.

Agenda Item 14. Next meetings of SC and its subsidiary bodies

14.1 Meeting Schedule for 2025/2026

148. The Science Manager presented a proposed meeting schedule for 2025-2026 (NPFC-2024-SC09-IP02).

14.2 Meeting format and location

149. The SC suggested the following provisional meeting schedule for the 2025 operational year, subject to further update before COM09:
    (a) SSC NFS02: 8-10 July 2025 in China (3 days, hybrid)
    (b) WG NSAM: 12-14 July 2025 in China (3 days, hybrid)
    (c) TWG CMSA11: 16-19 July 2025 in China (4 days, hybrid)
    (d) SSC PS15: 1–5 September 2025 (5 days, virtual)
    (e) SSC BF-ME06: 8–9 or 8–10 December 2025 in Japan (2-3 days, hybrid)
    (f) SSC PS16: 10–13 or 11–13 and 15 December 2025 in Japan (4 days, hybrid)
    (g) SC10: 15–18 or 16–19 December 2025 in Japan (4 days, hybrid)
    (h) SSC NFS03: January 2026 (3 days, virtual)
    (i) TWG CMSA12: January/February 2026 (4 days, virtual)

150. The SC's subsidiary bodies will hold informal web meetings to check progress and plan intersessional work, when needed.

151. Members were invited to consider hosting scientific meetings in the 2026 operational year and inform the Secretariat preferably by summer 2025.

Agenda Item 15. Press release

152. The SC endorsed the press release for publication on the NPFC website after the meeting (NPFC-2024-SC09-IP10 (Rev. 1)).

Agenda Item 16. Adoption of the Report

153. The SC09 Report was adopted by consensus.

Agenda Item 17. Close of the Meeting

154. The SC expressed its sincere thanks to the SC Chair for leading the meeting, the Secretariat for its organization and preparations, and Japan for hosting the meeting.

155. The SC Chair thanked the participants for their hard work, the Secretariat for its support, the rapporteur for his assistance, and Japan for its hospitality.

156. The meeting closed at 16:40 on 20 December 2024, Tokyo time.

Annexes:

Annex A – Agenda
Annex B – List of Documents
Annex C – List of Participants
Annex D – SWG Milestones report
Annex E – Species summary for chub mackerel
Annex F – Species summary for North Pacific armorhead
Annex G – Species summary for splendid alfonsino
Annex H – Species summary for sablefish
Annex I – Species summary for blackspotted and rougheye rockfishes
Annex J – Species summary for skilfish
Annex K – Species summary for neon flying squid
Annex L – Species summary for Pacific saury
Annex M – Species summary for Japanese flying squid
Annex N – Species summary for Japanese sardine
Annex O – Species summary for blue mackerel
Annex P – Stock assessment report for chub mackerel
Annex Q – Stock assessment report for Pacific saury
Annex R – Revised CMM 2024-05 - Conservation and Management Measure for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northwestern Pacific Ocean
Annex S – Revised CMM 2024-06 - Conservation and Management Measure for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northeastern Pacific Ocean
Annex T – US statement on its ongoing call for closure of the bottom fisheries on the Emperor Seamount Chain and Northwestern Hawaiian Ridge
Annex U – Terms of Reference for the Small Scientific Committee on Neon Flying Squid
Annex V – CPUE Standardization Protocol for neon flying squid
Annex W – Stock Assessment Protocol for neon flying squid
Annex X – Table of tasks for the SWG JFS, the SWG JS, and the SWG BM in 2025
Annex Y – Terms of Reference for the Small Working Group on Data (SWG Data)
Annex Z – Revised Regulations for Management of Scientific Data and Information
Annex AA – Scientific projects
Annex BB – Evaluation and ranking of nominations for SC representatives to be financially supported to participate in relevant scientific meetings
Annex CC – Five-Year Research Plan and Work Plan of the Scientific Committee

Please refer to the NPFC website for the complete annexes.

6th Meeting of the Joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury

13–14 February 2025

Virtual

Meeting Report

Agenda

Agenda Item 1. Introductory items
- 1.1 Opening of the meeting
- 1.2 Adoption of agenda
- 1.3 Meeting logistics

Agenda Item 2. Overview of the outcomes of previous NPFC meetings
- 2.1 SWG MSE PS05
- 2.2 COM08
- 2.3 SSC PS13 and 14

Agenda Item 3. Overview of MSE
- 3.1 Roles of SWG MSE PS in the NPFC process
- 3.2 Basic principles of MSE

Agenda Item 4. Review of results of the adopted HCR
- 4.1 TAC for 2024
- 4.2 HCR-generated TAC for 2025

Agenda Item 5. Discussion toward development of management procedures (MPs) as a mid-term goal
- 5.1 Management objectives
- 5.2 Operating models
- 5.3 Management procedures
- 5.4 Performance indicators

Agenda Item 6. Other matters

Agenda Item 7. Timeline and future process
- 7.1 Timeline
- 7.2 Future process with assistance of SSC PS
- 7.3 Workplan till SSC PS15&16 and SWG MSE PS07 meetings

Agenda Item 8. Recommendations to the Commission

Agenda Item 9. Adoption of report

Agenda Item 10. Close of the meeting

MEETING REPORT

Agenda Item 1. Introductory items

1.1 Opening of the meeting

1. The 6th meeting of the joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS) was held online via WebEx on 13–14 February 2025. The meeting was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and the Republic of Vanuatu. The Pew Charitable Trusts (Pew) attended as an observer. Dr. Larry Jacobson participated as an invited expert. The meeting was chaired by Mr. Derek Mahoney (Canada) and Dr. Toshihide Kitakado (Japan), the co-Chairs of the SWG MSE PS.

2. Mr. Mahoney opened the meeting and welcomed the participants.

3. Mr. Alex Meyer was selected as rapporteur.

1.2 Adoption of agenda

4. The agenda was adopted without revision (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

1.3 Meeting logistics

5. The Science Manager, Dr. Aleksandr Zavolokin, outlined the meeting arrangements.

Agenda Item 2. Overview of the outcomes of previous NPFC meetings

2.1 SWG MSE PS05

6. Dr. Kitakado (hereafter “co-Chair”) presented the outcomes and recommendations from the SWG MSE PS05 meeting.

2.2 COM08

7. The Science Manager presented the outcomes from the 8th Commission meeting of relevance to the SWG MSE PS. He highlighted the adoption of Conservation and Management Measure (CMM) 2024-08 for Pacific Saury, including the adoption of the interim HCR and interim

biological reference points, and the setting of the total allowable catch (TAC).

2.3 SSC PS13 and 14

8. The co-Chair presented the outcomes and recommendations from the 13th and 14th meetings of the Small Scientific Committee on Pacific Saury (SSC PS).

Agenda Item 3. Overview of MSE

3.1 Roles of SWG MSE PS in the NPFC process

3.2 Basic principles of MSE

9. The co-Chair presented an overview of the management strategy evaluation (MSE) process (NPFC-2024-SWG MSE PS05-IP01), including the role of the SWG MSE PS, the basic principles of an MSE, the merits of an MSE, and the need to define meta-rules to deal with exceptional circumstances in the future.

Agenda Item 4. Review of results of the adopted HCR

4.1 TAC for 2024

10. The SWG MSE PS noted the TAC set for 2024 in CMM 2024-08.

4.2 HCR-generated TAC for 2025

11. The co-Chair presented the TAC for 2025 computed by the SSC PS by applying the interim HCR for Pacific saury adopted by NPFC in April 2024 under CMM 2024-08. Based on inputs from the assessment, TAC2025 = (B2024*F_{MSY}*(B_{2024}/B_{MSY}) 75,741 mt. Based on the adopted HCR, the TAC will be constrained to change by no more than 10% from one year to the next. The constrained 2025 TAC would be 0.9 x 225,000 = 202,500 mt.

12. The SWG MSE PS reviewed the application and endorsed the TAC calculation.

13. China expressed concern about the potential uncertainty in the long-term stock projections caused by scaling issues in the BSSPM model, which influences the outcomes of the interim HCR. China noted that, in the hypothetical case the biomass of Pacific Saury estimated by the stock assessment stays at its current level and/or if the scaling issue cannot be resolved in future stock assessments, then based on the adopted interim HCR, the calculated TAC with a 10% MAC will be progressively reduced to 78,453 mt by 2034. After this point, it will begin to increase, as the calculated TAC with the 10% MAC will become smaller than the unconstrained TAC (75,741 mt). This TAC trend significantly differs from the simulation testing results based on the base case scenario presented during the SWG MSE PS05 meeting, which could substantially influence the expectations of fishery managers and stakeholders regarding stock status and management measures.

14. Other Members noted the analysis from China was not reviewed by the SSC PS and is premature to be used as the basis of management advice. It was pointed out that the TAC calculated for 2025, as well as the trends in the hypothetical case presented by China, were not substantially different from the simulation testing robustness case where there was reduced stock productivity due to persistent unfavorable environmental conditions.

Agenda Item 5. Discussion toward development of management procedures (MPs) as a mid-term goal

5.1 Management objectives

5.2 Operating models

5.3 Management procedures

5.4 Performance indicators and simulation

15. The SWG MSE PS held initial discussions on additional elements that could be considered when developing a full MP and compiled them into a table (Annex D). The table needs to be continuously refined as the full MP development progresses.

Agenda Item 6. Other matters

16. No other matters were raised.

Agenda Item 7. Timeline and future process

7.1 Timeline

7.2 Future process with assistance of SSC PS

7.3 Workplan till SSC PS15&16 and SWG MSE PS07 meetings

17. The SWG MSE PS developed a timeline, with future tasks, for 2025–2027 (Annex E).

18. The invited expert noted the intensive workload planned for the SSC PS and the SWG MSE PS and encouraged them to simplify their work to develop a full MP to the extent possible.

Agenda Item 8. Recommendations to the Commission

19. The SWG MSE PS recommends that the Commission note the TAC calculated for 2025 (paragraph 11).

20. The SWG MSE PS recommends that an invited expert be invited to the next SWG MSE PS meeting.

21. The SWG MSE PS recommends that the Commission endorse the holding of SWG MSE PS07 for one or two days between SC10 and COM10 in a virtual or hybrid format (Annex E).

22. The SWG MSE PS recommends that the Commission reaffirm the importance of including scientists, managers, and stakeholders at future meetings to facilitate communication and completion of this important work.

Agenda Item 9. Adoption of report

23. The SWG MSE PS06 Report was adopted by consensus.

Agenda Item 10. Close of the meeting

24. The co-Chairs thanked the participants for their cooperation, the Secretariat for organizing the meeting, the rapporteur for his support, and the invited expert for his advice.

25. The SWG MSE PS thanked the co-Chairs for their leadership.

26. The invited expert expressed his gratitude for the opportunity to work with the NPFC.

27. The meeting closed at 10:40 on 14 February 2025, Tokyo time.

Annexes:

Annex A – Agenda

Annex B – List of documents

Annex C – List of participants

Annex D – A draft table of elements that could be considered when developing a full MP in the MSE for Pacific saury

Annex E – Timeline and tasks for developing a full MP for the Pacific saury MSE

Please refer to the NPFC website for the complete annexes.

10th Meeting of the Technical Working Group on Chub Mackerel Stock Assessment

28 February, 1, 3 and 4 March 2025

Virtual

Meeting Report

Agenda

Agenda Item 1. Opening of the Meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Overview of the recommendations and outcomes of previous NPFC meetings relevant to chub mackerel

- 3.1 TWG CMSA09
- 3.2 Intersessional meetings of TWG CMSA
- 3.3 SC09

Agenda Item 4. Discussion on discrepancies between the input data for the 2024 stock assessment and reported values in Annual Summary Footprint

- 4.1 Review of how to revise data and results
- 4.2 How to present the updated results of SAM
- 4.3 Timeline for developing advice to COM based on recommendation from SC09

Agenda Item 5. Members fishery status and research activities

Agenda Item 6. Review of stock assessment for CM

- 6.1 Member's stock assessment
- 6.2 2024 stock assessment by TWG CMSA

Agenda Item 7. Update of biological information

- 7.1 Maturity-at-age and natural mortalities
- 7.2 Finalization of biological parameters for stock assessment in TWG CMSA11

Agenda Item 8. Fishery and biological data for stock assessment

- 8.1 Catch-at-age
  - 8.1.1 Length frequency, catch-at-length/size and age-length key
  - 8.1.2 Calculation of catch-at-age
- 8.2 Weight-at-age
- 8.3 Finalization of fishery and biological data for stock assessment in TWG CMSA11

Agenda Item 9. Abundance indices

- 9.1 Update of abundance indices submitted by Members

9.2 Usage of abundance indices in the 2025 stock assessment
9.3 Finalization of abundance indices for stock assessment in TWG CMSA11

Agenda Item 10. Settings and specifications of SAM
10.1 Review of current settings and specifications
10.2 Discussion towards finalization of settings and specifications

Agenda Item 11. Biological reference points
11.1 Methods to calculate biological reference points
11.2 List of reference points for stock assessment in TWG CMSA11

Agenda Item 12. Future projection of chub mackerel
12.1 Methods to conduct future projection

Agenda Item 13. Future tasks for improving CM stock assessment, reference points and future projections

Agenda Item 14. Review of the Work Plan of the TWG CMSA
14.1 Discussion on possible changes in TWG CMSA meeting schedule to include most recent data into stock assessment

Agenda Item 15. Other matters
15.1 Timeline and intersessional activities before TWG CMSA11
15.2 Observer Program
15.2.1 Review of data or data description on fisheries bycatch in chub mackerel fisheries
15.3 Species summary
15.4 Other issues

Agenda Item 16. Adoption of Report

Agenda Item 17. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 10th Meeting of the Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA) was held online via WebEx on 28 February, 1, 3 and 4 March 2025. The meeting was attended by Members from Canada, China, the European Union (EU), Japan, the Russian Federation, and the United States of America. The Pew Charitable Trusts (Pew) attended as an Observer. An invited expert, Dr. Joel Rice, participated in the meeting.

2. The meeting was opened by Dr. Kazuhiro Oshima (Japan), the TWG CMSA Chair.

3. The Science Manager, Dr. Aleksandr Zavolokin, outlined the procedures for the meeting.

4. Mr. Alex Meyer was selected as rapporteur.

Agenda Item 2. Adoption of Agenda

5. The TWG CMSA agreed to add "Discussion on discrepancies between the input data for the 2024 stock assessment and reported values in Annual Summary Footprint" as a new Agenda Item 4, with sub-agenda items on "Review of how to revise data and results," "How to present the updated results of SAM," and "Timeline for developing advice to COM based on recommendation from SC09."

6. The TWG CMSA agreed to change Agenda Item 13 from "Initiation of discussion on management strategy evaluation (MSE) for CM," to "Future tasks for improving CM stock assessment, reference points and future projections."

7. The revised agenda was adopted (Annex A). The List of Documents and List of Participants are attached (Annexes B, C).

Agenda Item 3. Overview of the recommendations and outcomes of previous NPFC meetings relevant to chub mackerel

3.1 TWG CMSA09

8. The Chair provided an overview of the outcomes and recommendations of the 9th TWG CMSA meeting.

3.2 Intersessional meetings of TWG CMSA

9. The Chair provided an overview of the intersessional meeting of the TWG CMSA held on 6 December 2024.

3.3 SC09

10. The Science Manager presented the outcomes from the 9th Meeting of the Scientific Committee (SC09) of relevance to chub mackerel.

Agenda Item 4. Discussion on discrepancies between the input data for the 2024 stock assessment and reported values in Annual Summary Footprint

4.1 Review of how to revise data and results

11. The Chair recalled that prior to SC09, the TWG CMSA identified discrepancies between Members' total catches as reported in the annual summary footprint and their total calculated catches as the sum of product of catch-at-age (CAA) with weight-at-age (WAA). He reminded the TWG CMSA that the SC requested that Members revise their data and submit the revised data to the TWG CMSA, that the TWG CMSA re-run the stock assessment and update the model output if possible, and that the TWG CMSA investigate the source of the discrepancies and recommend quality assurance and quality control measures to prevent the recurrence of similar issues in the future. The Chair also explained that since SC09, China, Japan, and Russia have conducted preliminary revisions and shared the updated data on the Collaboration site and that the invited expert has reviewed these data.

12. China, Japan, and Russia provided explanations on their methods for computing the calculated catch, the potential sources of the data discrepancies, and proposed approaches for resolving the discrepancies. The TWG CMSA reviewed the information and provided feedback for further improvements. China, Japan, and Russia continued to revise their data during the meeting based on the feedback.

13. Japan provided an explanation on potential causes of the catch discrepancy, and after addressing the causes, the discrepancy in fishing year (FY) 2014 was resolved (0% difference) and was similar to other years (NPFC-2025-TWG CMSA10-IP08).

14. The TWG CMSA noted that Members have made significant efforts to identify the sources of the data discrepancies, resolve the issues, and revise their data accordingly. The TWG CMSA noted that, nevertheless, some issues still remain, and therefore agreed to continue to work to

resolve the outstanding issues in the intersessional period.

15. The TWG CMSA requested that China, Japan, and Russia each prepare and provide a paper documenting their methods for computing the calculated catch, the potential sources of the data discrepancies, and their proposed approaches for resolving the discrepancies in the intersessional period and provide it by 4 April.

4.2 How to present the updated results of SAM

16. Japan presented the preliminary results from inputting Members' latest available revised data that were submitted prior to TWG CMSA 10. These included scaling CAA to better agree with the footprint catch estimates for China and Japan, and a modification to the underlying age length key (ALK) used by Russia when calculating CAA. The preliminary results suggested the difference between estimated model parameters from the state-space assessment model (SAM) results using the original and the tentatively revised data received prior to the TWG CMSA10 meeting were generally less than 10%.

4.3 Timeline for developing advice to COM based on recommendation from SC09

17. The TWG CMSA agreed to discuss the timeline for developing advice to the Commission based on the recommendation from SC09 in the intersessional period.

18. The TWG CMSA discussed possible measures for the assurance and control of data quality, including:
    (a) Establishment of TWG CMSA Data Manager(s) to compile submitted data and prepare input data for stock assessment
    (b) Appointment of Data Correspondent(s) by Member
    (c) Data templates for each data item in CSV format
    (d) R code for Member's data compilation
        i. Agree on a set of checks to include
        ii. Agree on CAA*WAA and annual footprint acceptable error threshold
    (e) R code for stock assessment input data preparation

19. The TWG CMSA discussed the creation of a data preparation protocol that would include the following steps:
    (a) Submit data by the predetermined deadline prior to the TWG CMSA data preparatory meeting
        i. Important to ensure the quality assurance of the data
        ii. Data templates for each data type to reduce format processing time
    (b) TWG CMSA Data Manager runs Member's data compilation R code and shares the

compiled file with Members

(c) Members check their data and correct any mistakes, if possible

(d) TWG CMSA Data Manager re-runs R data compilation, if needed

(e) Data preparation and compilation results presented at TWG CMSA data preparatory meeting

20. The TWG CMSA agreed to appoint Karolina Molla Gazi (EU) and Akihiro Manabe (Japan) as the TWG CMSA Data Managers. Members nominated Qiuyun Ma (China), Heng Zhang (China), Akihiro Manabe (Japan), Kazunari Higashiguchi (Japan) and Igor Chernienko (Russia) as TWG CMSA Data Correspondents.

Agenda Item 5. Members' fishery status and research activities

21. The TWG CMSA noted the information provided by Canada on Canadian catches of chub mackerel (NPFC-2025-TWG CMSA10-IP01). Chub mackerel have been captured as bycatch in bottom trawl, midwater trawl, and the hook and line halibut fisheries, as well as in research surveys. Chub mackerel are also often captured as bycatch in recreational and commercial fisheries for Pacific salmon species, especially in northern British Columbia.

22. Japan presented a review of the recent fishery and stock status of chub mackerel (NPFC-2025-TWG CMSA10-IP04). Japan's catch comes from large-scale purse seine vessels, small-scale purse seine vessels, set nets, and dip nets and other gears. The majority of the catch is from large-scale purse seine vessels. In the FY2023, the catch has been approximately 74,600 MT. There is usually substantial catch between November and March, with catch in November tending to be high, but the catch has been decreasing. Japan's 2024 summer surface trawl survey showed broad distribution of age-0 and age-1+ fish offshore by 170 °E, although nominal catch per unit effort (CPUE) was generally low. Japan's 2024 autumn surface trawl survey was limited and could not be conducted in coastal areas due to adverse weather conditions, but showed broad distribution of chub mackerel offshore. The egg survey shows that the main spawning ground is near the Izu Islands and coastal Japan. Egg abundance has been low since 2023. The most commonly caught bycatch species from large-scale purse seine vessels is Japanese sardine. Japan also explained its methods for distinguishing chub mackerel and blue mackerel and estimating their ratio in mackerel catch and provided an overview of the Japanese domestic stock assessment for chub mackerel conducted using a state-space assessment model (SAM).

23. Russia presented a review of its chub mackerel fishery and research activities in 2024 (NPFC-2025-TWG CMSA10-IP02). In 2024, the main fishing grounds were in the Japanese exclusive economic zone (EEZ) in January and partially in December, and the Russian EEZ for the rest

of the fishing season. Some vessels also fished in the Convention Area in April, May and December. Average catch per unit effort (CPUE; catch per vessel per day) was high in the winter months, but significantly lower than in 2020–2022. In the summer and the first half of autumn, the CPUE was very low and did not exceed 5 tons, only starting to increase in November. The average CPUE in 2024 was significantly lower than in 2023. Monthly catches were also highest during the winter in 2023. Catches were minimal in the summer and increased in the autumn as the number of fishing vessels increased. The 2024 catch is lower than the 2023 catch. The Russian targeted mackerel fishery was started in 2016 when 6,700 MT of mackerel were caught. In 2018, the maximum catch was reached (98,800 MT) and catch started to decrease thereafter. In 2024, the catch was 7,200 MT. In terms of research activities, Russian vessels carry out surveys of the Northwest Pacific Ocean, covering both the Russian EEZ and open waters to the east of the Kuril Islands. Surveys are carried out in June–July annually, and in some years a second survey is carried out in August-September. Surveys are carried out in two ways: pelagic trawls and hydroacoustic surveys. In the survey in the first half of summer 2024, the biomass of mackerel in Pacific waters was estimated as 9,130 MT by trawl survey and 364,000 MT by hydroacoustic survey data.

24. China presented a review of its chub mackerel fishery and research activities (NPFC-2025-TWG CMSA10-IP03). In 2024, China operated 103 purse seine vessels and 3 trawl vessels in the Convention Area. The estimated catch in 2024 of chub mackerel and blue mackerel was about 72,000 MT, an increase from 2023. Nominal CPUE has also increased in 2024. The distribution of chub mackerel in 2024 was similar to that in 2023. The average length of caught individuals was 249.4 mm, slightly larger than in 2023 (231.1 mm). The main ages at catch in 2024 were from 1 to 3, similar to previous years. China collects and analyzes fishing logbooks every year, collects samples on fishing vessels and in ports, monitors the monthly ratio of chub mackerel and blue mackerel in catch, and conducts monitoring of biological features. Since 2023, China has increased sample collection for pelagic trawl nets in the North Pacific. The fork length frequency in trawl nets has been very similar to that in the purse seine fishery.

Agenda Item 6. Review of stock assessment for CM

6.1 Member's stock assessment

25. The TWG CMSA noted the domestic stock assessment presented by Japan under Agenda Item 5.

26. The invited expert presented a preliminary analysis of the CM data submitted to TWG CMSA 09 using the Stock Synthesis 3 modeling platform (SS3, https://nmfs-ost.github.io/ss3-website/). The presentation included only preliminary fits to the data, and the invited expert stressed that this was an early attempt to incorporate the CM data into SS3. The invited expert

noted the ongoing effort to develop finalized catch-at-age values by the TWG CMSA and noted that these data would be incorporated into the model when ready along with other suggested changes. The invited expert will post the updated model to the Collaboration site along with the figures and tables related to the output.

27. Members briefly discussed challenges and opportunities of using the SS3 modeling framework with respect to chub mackerel and shared their feedback on the Collaboration site for future work.

6.2 2024 stock assessment by TWG CMSA

28. The Chair presented an overview of the 2024 stock assessment conducted by the TWG CMSA.

Agenda Item 7. Update of biological information

7.1 Maturity-at-age and natural mortalities

29. Japan presented its updated maturity-at-age data (NPFC-2025-TWG CMSA10-IP05). Maturity at age in FY2023 is considered unchanged from FY2022.

30. Japan presented the study of criteria to determine the maturation status used in Japan and explained that the criteria used in Watanabe (2010) is still applicable to the current stock according to histological observation. Japan also presented its progress on the study of maturity-at-age in different regions in Japanese coastal waters and proposed that Japan will continue investigate the method to calculate maturity-at-age (NPFC-2025-TWG CMSA10-IP06).

31. China presented its updated maturity-at-age data that was shared on the Collaboration site.

32. As future work, the TWG CMSA encouraged China and Japan to work together to develop a standardized protocol for determining maturity.

7.2 Finalization of biological parameters for stock assessment in TWG CMSA11

33. The TWG CMSA discussed the biological parameters to be used for the stock assessment of chub mackerel under Agenda Item 10.

Agenda Item 8. Fishery and biological data for stock assessment

8.1 Catch-at-age

8.1.1 Length frequency, catch-at-length/size and age-length key

8.1.2 Calculation of catch-at-age

8.2 Weight-at-age

34. China explained that it has shared its latest catch-at-age and weight-at-age data and the documentation describing the calculation methods on the Collaboration site.

35. Japan presented the estimation method and data on catch, weight, and maturity at age of the chub mackerel caught by Japan up to calendar year (CY) 2024 Q2 (NPFC-2025-TWG CMSA10-WP03). Catch data are collected by month, prefecture, and gear type. Measurement of length data is obtained from the major landing port to develop catch at length from each prefecture on a quarterly basis. Age data are obtained from the subsample of mackerels for which fork length are measured and annulus of scale or annual increments of otolith are counted. The age data are subdivided into the Eastern and Western part of the Pacific coastal prefectures of Japan to construct an age-length key and catch at age is calculated for each quarter. Japan has prepared and presented data to construct catch at age up to the second quarter of 2024 (CY2024 Q2). The trend of catch at age shows a decreased catch number in CY2023 Q3-CY2024 Q2 compared to the previous years.

36. Russia explained that it will share its updated catch-at-age data and weight-at-age data and the documentation describing the calculation methods within March.

37. The TWG CMSA agreed to continue discussions intersessionally to decide on the calculation method for weight-at-age to be used in SAM to convert the stock number to stock biomass.

38. China presented the annual ratios of each species in China's combined blue mackerel and chub mackerel catch for 2014–2023.

39. Japan presented the annual ratios of each species in Japan's combined blue mackerel and chub mackerel catch for 2014–2023.

40. The TWG CMSA requested China and Japan to continue to regularly provide this information. As future work, the TWG CMSA encouraged China and Japan to work together to develop a standardized approach for calculating the ratio of chub mackerel and blue mackerel and also to provide quarterly ratios.

8.3 Finalization of fishery and biological data for stock assessment in TWG CMSA11

41. The TWG CMSA compiled a table of age-specific data to be used in the stock assessment (Annex D).

42. The TWG CMSA requested that Russia update its quarterly data up to the first half of 2024 (CY). Russia agreed to submit its updated data by the end of March 2025.

Agenda Item 9. Abundance indices

9.1 Update of abundance indices submitted by Members

9.2 Usage of abundance indices in the 2025 stock assessment

43. China presented a standardization of CPUE data for chub mackerel caught by the China's lighting purse seine fishery from 2014 to 2023 using a generalized additive model (GAM) (NPFC-2025-TWG CMSA10-WP09). Four groups of independent variables were considered in the CPUE standardization: spatial variables (latitude and longitude), temporal variables (year and month), fishery variables (vessel length) and environmental variables (sea surface temperature (SST) and chlorophyll-a concentration (Chla)). China recommended using the standardized CPUE derived from GAM as an input for the forthcoming chub mackerel stock assessment.

44. The TWG CMSA agreed to use China's standardized CPUE derived from GAM as an input for the chub mackerel stock assessment.

45. Japan presented a standardization of egg abundances from monthly egg density data obtained by research surveys for the Pacific stock of chub mackerel (NPFC-2024-TWG CMSA10-WP07). Japan applied the VAST model to the monthly egg survey data from 2005 to 2024 off the Pacific coast of Japan to cover the spawning ground of chub mackerel. The standardized CPUE reached its peak in 2019, but has been on a downward trend since then, reaching its lowest levels in 2023 and 2024 since 2005. Japan found no serious problems in the diagnostics of the spatio-temporal model. Japan recommended using the estimated index as a spawning stock biomass (SSB) abundance index for the forthcoming chub mackerel stock assessment.

46. The TWG CMSA agreed to use Japan's standardized chub mackerel egg abundance index as an input for the stock assessment.

47. Japan presented a standardization of CPUE data for Pacific chub mackerel from 2003 to 2024 from its commercial dip-net fishery using a generalized linear mixed-effect model (NPFC-2025-TWG CMSA10-WP06). The analysis showed that the dip-net fishery CPUE was affected by month, area, SST, and ship as well as year. The abundance index standardizing these influential variables except for year showed a great decline in 2022-2024 after a high-level decade from 2011 to 2021. Model diagnostics suggested some areas in which the model could be improved. Nevertheless, the CPUE of the dip-net fishery targeting the spawners represents valuable information regarding the abundance of spawning fish of chub mackerel because it is believed that the majority of spawning chub mackerel migrates around the Izu Islands. Japan recommended using the standardized CPUE derived from a generalized linear mixed-effect

model as an input for the forthcoming chub mackerel stock assessment.

48. The TWG CMSA agreed to use Japan's standardized CPUE derived from a generalized linear mixed-effect model as an input for the stock assessment.

49. Japan presented a standardization of CPUE data from surface trawl surveys in summer for Pacific chub mackerel using the VAST model (NPFC-2025-TWG CMSA10-WP08). The survey covers a broad area in the Northwest Pacific Ocean. Japan estimated local densities of young-of-the-year fish in the Northwest Pacific from 2002 to 2024 with consideration for environmental factors of SST and 50m-depth temperature as well as spatial autocorrelation. The analysis showed high levels of recruitment index have frequently occurred since 2013, although the recruitment has been decreasing since 2021. This standardized index covers a long time series from periods of poor recruitment to high recruitment. Model diagnostics found no serious problems in residual patterns and showed favorable results. Japan recommended using this standardized recruitment index as the abundance index of age-0 fish in the forthcoming chub mackerel stock assessment.

50. The TWG CMSA agreed to use Japan's standardized recruitment index as the abundance index of age-0 fish in the stock assessment.

51. Japan presented a standardization of CPUE data from surface trawl surveys in autumn for Pacific chub mackerel using the vector-autoregressive spatio-temporal (VAST) model (NPFC-2025-TWG CMSA10-WP05). The survey covers a moderately broad area in the Northwest Pacific Ocean. Japan estimated local densities of 0-year-old fish and 1-year-old fish in the Northwest Pacific from 2005 to 2024 with consideration for environmental factors of SST and 30m-depth temperature as well as spatial autocorrelation. The analysis showed high levels of abundances frequently occurred since 2013. However, the abundance decreased in 2023 and 2024. This standardized index covers a long time series from periods of poor recruitment to high recruitment. Model diagnostics found no serious problems in residual patterns and showed favorable results. Japan recommended using these standardized abundance indices as the abundance indices for age-0 fish and age-1 in the forthcoming chub mackerel stock assessment.

52. The TWG CMSA agreed to use Japan's standardized abundance indices for age-0 fish and age-1 fish as inputs for the stock assessment.

53. Russia explained that since the previous standardization of the CPUE data for chub mackerel caught by its trawl fishery from 2016 to 2023 using GAM, which it presented at TWG CMSA09 (NPFC-2024-TWG CMSA09-WP11), it has prepared an updated CPUE standardization but is

not yet able to present it at this meeting. Russia noted that the updated CPUE standardization does not differ significantly from its previous CPUE standardization.

54. The TWG CMSA09 noted that Russia's previous CPUE standardization included data up to the planned terminal year (FY2023) for the forthcoming stock assessment and that this has been reviewed by the TWG CMSA. The TWG CMSA therefore agreed that Russia's standardized CPUE derived from GAM described in NPFC-2024-TWG CMSA09-WP11 could be used as an input for the chub mackerel stock assessment. At the same time, the TWG CMSA noted Russia's intention to provide its updated CPUE standardization and agreed to review Russia's CPUE standardization, if it is provided by the end of March 2025, at an intersessional meeting and consider it for use in the forthcoming stock assessment.

9.3 Finalization of abundance indices for stock assessment in TWG CMSA11

55. The TWG CMSA compiled a table of abundance indices to be used in the stock assessment (Annex E).

Agenda Item 10. Settings and specifications of SAM

10.1 Review of current settings and specifications

56. The TWG CMSA agreed that the assessment period will be FY1970–FY2023 (from 1 July 1970 to 30 June 2024).

10.2 Discussion towards finalization of settings and specifications

57. The TWG CMSA reviewed and updated the draft table of settings and specification of SAM (Annex F). In particular, the use of a smooth hockey stick stock recruitment function was suggested by a Member and its trial and further consideration was welcomed by the Members. The TWG CMSA agreed to continue to discuss and develop the table and to finalize it at TWG CMSA11.

Agenda Item 11. Biological reference points

11.1 Methods to calculate biological reference points

11.2 List of reference points for stock assessment in TWG CMSA11

58. The TWG CMSA reviewed and updated the draft table of reference points (Annex G). The TWG CMSA agreed to continue to discuss and develop the table and to finalize it at TWG CMSA11. In particular, the TWG CMSA noted the need to hold further discussions on the applicable period for the reference points, whether to use deterministic or stochastic MSY-based reference points, and the applicable year for defining Fcurrent.

Agenda Item 12. Future projection of chub mackerel

12.1 Methods to conduct future projection

59. The TWG CMSA reviewed and updated the draft table of possible options for the basic specifications for conducting future projections for chub mackerel (Annex H). In particular, incorporation of uncertainty in parameter estimation into the future projection was suggested by a Member and its trial and further consideration was welcomed by the Members. The TWG CMSA agreed to continue to discuss and develop the table and to finalize it at TWG CMSA11.

Agenda Item 13. Future tasks for improving CM stock assessment, reference points and future projections

60. The TWG CMSA discussed potential future tasks for improving the CM stock assessment, including:
    (a) Consider the frequency of stock assessments, including benchmark stock assessments and simpler stock assessment updates (short/mid-term). It would be useful to receive input from the Commission in this regard.
    (b) Collaborative work on chub mackerel maturity (short/mid-term)
    (c) Selection of abundance indices in base case runs based on similarity in trends (mid-term)
    (d) Introduction of fleet configuration in SAM (mid-term)
    (e) Further consideration of process error application into SAM (mid-term)
    (f) Continuation of use of SAM or development of another stock assessment model (long-term)

61. In relation to future projections, the TWG CMSA discussed the potential development of an HCR as a mid-term task.

Agenda Item 14. Review of the Work Plan of the TWG CMSA

62. The TWG CMSA agreed to review and update its work plan for 2025–2029 at TWG CMSA11.

14.1 Discussion on possible changes in TWG CMSA meeting schedule to include most recent data into stock assessment

63. The TWG CMSA held preliminary discussions on possible changes in the TWG CMSA meeting schedule to be able to include the most recent data into stock assessments. The TWG CMSA drafted a potential modified meeting timeline, with data submission and meeting timings (Annex I). The TWG CMSA agreed to continue to discuss this matter in the future.

Agenda Item 15. Other matters

15.1 Timeline and intersessional activities before TWG CMSA11

64. The TWG CMSA drafted a timeline of tasks leading up to TWG CMSA11 (Annex J).

65. The TWG CMSA agreed to hold its next meeting on 15–18 July 2025.

15.2 Observer Program

15.2.1 Review of data or data description on fisheries bycatch in chub mackerel fisheries

66. Japan presented bycatch information from its chub mackerel fisheries when presenting a review of its recent fishery and the stock status of chub mackerel under Agenda Item 5. Japan also submitted a separate working paper with more detailed information to the meeting (NPFC-2025-TWG CMSA10-WP04). Chub mackerel has historically been caught by various fisheries, with a large proportion of the catch coming from the large purse seine fisheries. The Japanese large purse seine fisheries targeting small pelagic fish species, including mackerels, have captured several other pelagic fish species as bycatch as well.

67. China presented bycatch information from its chub mackerel fisheries (NPFC-2025-TWG CMSA10-IP07). The main bycatch species are Japanese sardine and blue mackerel. Other bycatch species include squid, Pacific saury and other pelagic species.

68. The TWG CMSA requested that Russia present the bycatch information its chub mackerel fisheries at TWG CMSA11.

15.3 Species summary

69. The TWG CMSA reviewed the species summary for chub mackerel and updated the draft table of data availability from Members regarding chub mackerel (NPFC-2025-TWG CMSA10-WP02 (Rev. 1)). The TWG CMSA agreed to continue to update the species summary as appropriate in the future.

15.4 Other issues

70. No other matters were discussed.

Agenda Item 16. Adoption of Report

71. The report was adopted by consensus.

Agenda Item 17. Close of the Meeting

72. The meeting closed at 11:00 on 4 March 2025, Tokyo time.

Annexes:

Annex A – Agenda

Annex B – List of Documents

Annex C – List of Participants

Annex D – Age-specific data to be used in the stock assessment and their specification

Annex E – Abundance indices to be used in the stock assessment and their specification

Annex F – Settings and specification of SAM

Annex G – Draft reference points for chub mackerel stock assessment

Annex H – Draft options for the basic specifications for conducting future projections for chub mackerel

Annex I – Timeline for data submission and meeting timing

Annex J – Timeline and activities for intersessional work from the conclusion of TWG CMSA10 to the next TWG CMSA meeting in July

Please refer to the NPFC website for the complete annexes.

8th Meeting of the Technical and Compliance Committee

18-21 March 2025

Osaka, Japan (Hybrid)

Meeting Report

Agenda

1. Opening of the Meeting
    a. Welcome to Participants
    b. Appointment of Rapporteur
    c. Introduction of Observers
    d. Adoption of Agenda
    e. Meeting Arrangements

2. Report from Secretariat
    a. Fisheries Overview
    b. Data Management System Update and Initiatives for 2025

3. Review of MCS related issues from SC

4. SWG Reports on Progress, Priorities and Recommendations
    a. SWG Planning and Development - Report and Recommendations
        i. NPFC Rules for Transparency Pertinent to TCC

    b. SWG Operations - Report and Recommendations

5. Conservation and Management Measures – Amendments or new CMMs

6. IUU Vessel List
    a. Recommendation for Provisional IUU Vessel List to the Commission
    b. Recommendations for amendments to current NPFC IUU Vessel List to Commission

7. Compliance Monitoring Scheme
    a. Draft Compliance Monitoring Reports for 2024 presentation by Secretariat
    b. Develop Provisional Compliance Report- Annual determination of compliance status and potential responses for each obligation subject to assessment for each Member
    c. List of obligations for consideration for the Compliance Monitoring Scheme in 2025

8. Transshipment
    a. Secretariat Report on 2024 activity

9. Vessel Monitoring System
    a. Secretariat report on implementation

10. High Seas Boarding and Inspection
    a. Secretariat Report
    b. Member Reports

11. Review of Applications for CNCP Status

12. Climate Change

13. Cooperation with Other Organizations
    a. MoU with SPRFMO
    b. MoU with WCPFC
    c. NPFC-NPAFC Work Plan
    d. IMCS Network

14. Performance Review- Recommendations relevant to TCC

15. Other Matters
    a. Consideration of Recommendations for TCC Chair/Vice Chair
    b. Historical Catch Level

16. Review and Endorsement of TCC Work Plan for 2024/2025

17. Recommendations to the Commission

18. Next Meeting

19. Adoption of the Report

20. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of Meeting

1a. Welcome to Participants

1. The 8th Meeting of the Technical and Compliance Committee (TCC) was held in a hybrid format, with participants attending in-person in Osaka, Japan, or online via WebEx, on 18-21 March 2025, and was attended by Members from Canada, China, the European Union (EU), Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America (USA), and Vanuatu. The meeting was opened by Ms. Alisha Falberg (USA), who served as the TCC Chair.

1b. Appointment of Rapporteur

2. Mr. Jacques Chaumont was appointed as the Rapporteur.

1c. Introduction of Observers

3. The Chair introduced approved observers permitted to be present. The accredited observers were Panama, Pew Charitable Trusts (Pew), the Ocean Foundation, Ocean Governance Institute, World Wildlife Fund (WWF), the Deep Sea Conservation Coalition (DSCC), the North Pacific Anadromous Fish Commission (NPAFC), and the IMCS Network. The observers were admitted without objection.

1d. Adoption of Agenda

4. The provisional agenda was adopted (Annex A) with the understanding that substantive discussion on historic fishing levels would be moved from item 4 to item 15 (Other Matters). The List of Documents and List of Participants are attached (Annexes B, C).

1e. Meeting Arrangements

5. The Compliance Manager, Ms. Judy Dwyer, outlined the meeting arrangements.

Agenda Item 2. Report from Secretariat

2a. Fisheries Overview 2024

6. The Compliance Manager presented the overview of NPFC fisheries from 2019 to 2024 (NPFC-2025-TCC08-IP01).

7. The TCC thanked the Secretariat for preparing the fisheries overview but noted several inconsistencies in the data presented, including instances where the number of active vessels appears to have exceeded the number of authorized vessels for certain Members, and issues with double-counting vessels targeting multiple species.

8. The EU requested the addition of CPUE trends from SC and graphical representations in future fisheries overviews and expressed concern about the significant increase in the number of active vessels in some NPFC fisheries, particularly for Japanese sardine and chub mackerel.

9. The TCC requested that Members work with the Secretariat throughout the meeting to reconcile the discrepancy issues raised, with the goal of producing a revised fisheries overview prior to the Commission meeting.

10. Several Members reiterated concerns about the discrepancies and inaccuracies in the numbers of their authorized vessels within the fisheries overview and discussed the appropriateness of adding disclaimers about the data tables to the Secretariat's report or within the TCC Report. Several Members expressed concern that a blanket disclaimer would be inappropriate, but individual Members may provide explanations for certain information if necessary.

11. The TCC closed discussion on fisheries overview, but the Secretariat's Fisheries Overview information paper was left open for Members to provide further updates and corrections to the data through the Commission meeting.

2b. Data Management System Update and Initiatives for 2025

12. The Data Coordinator, Mr. Sungkuk Kang, presented a summary of the status of all TCC-related data management systems' update and new initiatives for further development in 2025 by the Secretariat (NPFC-2025-TCC08-IP02). Updates have been made to the Members Home, Significant Dates/Events, Meeting Page, Transshipment Map, Annual Reports, Vessel Registry, HSBI Events, e-IUU, Pacific Saury Weekly Report, Chub Mackerel Monthly/Weekly Report, and Collaboration sections. In 2025, the Secretariat intends to advance the following key initiatives: incorporating a dashboard in the Member Portal to improve user accessibility and efficiency, integration of air surveillance data, implementing the transshipment API, improving Member account management, and regularly updating the NPFC website to ensure its data management systems align with Member requirements.

13. The TCC thanked the Secretariat for continuing to develop the NPFC data management system and improve its functionality and usability.

14. Several Members suggested potential further improvements to the data management system, including:

(a) Allowing delayed submission of transshipment reports in cases occurring due to administrative oversight;
(b) Continuing the development of the transshipment API;
(c) Enabling users to create their own accounts with administrator approval; and
(d) Adding bulk modification capabilities for the NPFC vessel registry.

Agenda Item 3. Review of MCS related issues from SC

15. The Science Manager, Dr. Aleksandr Zavolokin, provided a summary of monitoring, control and surveillance (MCS) matters for coordination between the Scientific Committee (SC) and the TCC (NPFC-2025-TCC08-IP03). These included proposed revisions to CMM 2024-05 for two new bottom fishing area closures to protect VMEs on Yuryaku Seamount; the SC's response to questions from the TCC Chair regarding a regional observer program; and ongoing discussion about data needs and data gaps that could be filled by a regional observer program.

16. The TCC noted the information provided by the Science Manager and welcomed the continued coordination and collaboration between the TCC and the SC.

17. The TCC Chair reported on her intersessional coordination with the SC Chair regarding potential options for a regional observer program beyond the transshipment observer program currently under development.

18. Some Members expressed concern that feedback received from the SC was insufficient, and encouraged seeking further guidance from the SC on what data would be useful to collect through an observer program to inform TCC discussions on implementation approaches.

19. Many Members expressed support for a stepwise approach to implementing observer programs, prioritizing the establishment of the transshipment observer program before considering a broader regional observer program. Some Members noted that important scientific data could be obtained through port sampling, existing Members' observer programs, and the forthcoming transshipment observer program.

20. The Ocean Foundation and Pew emphasized the importance of at-sea monitoring to verify catch data, detect potential high-grading or discards, and identify shark species caught.

21. Regarding the regional observer program, the TCC agreed that the TCC Chair should continue discussions with the SC Chair to seek more detailed information on potential scientific data needs that could be addressed through a broader regional observer program.
Recommendation: That the TCC Chair and SC Chair continue to work intersessionally towards identifying the potential data needs for a broader regional observer program.

22. The TCC noted the SC's recommendation regarding revisions to CMM 2024-05 for new bottom fishing area closures. Several Members expressed their support for this recommendation.

Agenda Item 4. SWG Reports on Progress, Priorities and Recommendations

4a. SWG Planning and Development Report - Report and Recommendations

23. Ms. Amber Lindstedt (Canada), Co-Lead of the SWG on Planning and Development (SWG PD), presented a summary of the work conducted by the SWG PD in the 2024-2025 intersessional period. Six meetings were held, in addition to advancing key files through email communication. Two priority tasks were completed: developing revised rules of transparency for TCC pertaining to participation of observers, and developing a proposal for a regional observer program for transshipment. The SWG PD developed a proposal for a new standalone transshipment observer program CMM (NPFC-2025-TCC08-WP13) and proposed amendments to the existing transshipment CMM (NPFC-2025-TCC08-WP15). Some issues remain in square brackets in the proposed text. The SWG PD was also tasked with developing a multi-year work plan in accordance with paragraph 27 of the compliance monitoring scheme measure that was revised at COM08, but did not have the capacity to address this item this year.

24. The TCC reviewed the proposed rules of transparency for TCC (NPFC-2025-TCC08-WP16) and endorsed the changes to remove the "INTERIM" designation from the title and make the proposed amendments, including those to accommodate the CMS process and to open the meetings to accredited observers as a general practice in accordance with the NPFC Rules of Procedure, and subject to NPFC's Data Sharing and Data Security Protocol.
Recommendation: That the Commission adopt the NPFC Rules of Transparency for TCC (NPFC-2025-TCC08-WP16).(Annex D)

4b. SWG Operations Report - Report and Recommendations

25. Ms. Patricia DeMille (Canada), Co-Lead of the SWG on Operations (SWG Ops), presented a summary of the work conducted by the SWG Ops in the 2024-2025 intersessional period. The SWG Ops held six meetings and prepared amendments to the transshipment and VMS measures. The SWG Ops discussed updates on the HSBI implementation plan and archiving it on the website for historical reference and creating a living MCS resource page. The SWG Ops advanced work on historical existing levels by creating a table with data from members for 2009-2023, but was unable to reach consensus on how to identify historical existing levels. The SWG Ops did not have time to address the tasking on responsibility for vessels under charter arrangements. Discussion on the matter of historical existing levels was moved to Other Matters in the agenda.

26. The TCC discussed the SWG Ops' work on serious violations. Several Members questioned the utility of continuing to task SWG Ops with defining serious violations, noting that relevant provisions already exist in the NPFC Convention, the UN Fish Stock Agreement, and the HSBI CMM.

27. Some Members expressed the view that the CMS process and the IUU vessel listing process are different approaches, with the former focused on Members' performance and the latter on individual vessel activities.

28. Other Members noted the importance of clarifying the connection between serious violations and further actions, such as the listing of IUU vessels, and suggested that the Commission has discretion to further elaborate the list of serious violations.

29. Following discussion with interested Members in the margins, the SWG Ops Co-Lead provided an overview of possible paths forward on the serious violations tasking. She noted that SWG Ops had conducted extensive review and analysis of serious violations but was unable to identify a path to inserting this work into a measure. She outlined options including developing a guidance document to support inspectors rather than formalizing this into a measure, and developing procedures for flag state responsibilities when a serious violation is detected.

30. The TCC noted that specific concerns with serious violations could be addressed through amendments to existing measures that Members could propose to future TCC meetings.
Recommendation: That the Commission task the SWG Ops in the intersessional period with: (a) compiling a list of all serious violations and vessel-based measures into a guidance document or inspector's aid, noting that these would be guidelines only and not measures;

and (b) developing a document outlining more robust actions and responsibilities for flag states when a serious violation is detected and the flag state is notified.

Agenda Item 5. Conservation and Management Measures – Amendments or new CMMs

31. Korea and the EU presented their respective proposals for minimum standards for port state measures (NPFC-2025-TCC08-WP09, NPFC-2025-TCC08-WP14), explaining that the proposals aim to fill a gap in the compliance and enforcement areas of the NPFC legal framework and strengthen the capacity of the organization to combat IUU activities in the Convention Area and implement Article 14.2(a) of the Convention.

32. The TCC discussed the two proposals for port state measures. Some Members expressed support for adopting port state measures as soon as possible, while other Members indicated that more time was needed for internal coordination related to PSMA implementation. There were concerns about specific provisions, including the mandatory nature of port designation and inspection timelines. Members provided various suggestions, including changing certain mandatory provisions to non-mandatory, aligning more closely with the WCPFC model, and ensuring consistency with the FAO PSMA.

33. The EU worked with Korea and interested Members to consolidate the two proposals in the margins of the meeting, and Canada agreed to co-sponsor the proposal.

34. The TCC discussed the proposal and was unable to reach a consensus. The TCC noted several fundamental issues remained unresolved despite productive discussions on the proposal.
Recommendation: That the Commission further consider the consolidated proposal on port state measures, taking into account the discussions at TCC.

35. The EU presented its proposal for establishing minimum standards for the collection, reporting, verification, and exchange of data (NPFC-2025-TCC08-WP10). The EU explained that the proposal aimed to address data-related issues by creating a more standardized approach to data collection processes in NPFC in accordance with Article 16 of the Convention.

36. The TCC discussed the proposal, noting that while there was general support for the direction of standardizing data collection, several technical concerns were raised. These included the practicality of certain data fields for different fisheries, the mandatory requirement for electronic logbooks, prescribed timelines for data submission, and the level of detail in the annexes. Members suggested that the SC and its SWG on Data should review the technical aspects of the proposal.

Recommendation: That the Commission task the TCC and SC to continue work intersessionally on the proposal for minimum standards for data collection, with the goal of adopting a measure in the near future.

37. The Co-Lead of the SWG Ops, Ms. DeMille, presented proposed amendments to CMM 2024-12 On the Vessel Monitoring System (NPFC-2025-TCC08-WP12) to require Members to notify the Secretariat of their vessels' entry into and exit from the Convention Area. The initial proposal added a new paragraph 11 requiring notification to be received no later than 60 minutes of entering or exiting the Convention Area, with procedures for notification to be chosen by Members from options listed in a new Annex 2.

38. The TCC discussed the proposed amendments to the VMS CMM. Several technical issues were raised by Members, including: (1) concerns about the 60-minute notification timeframe and how to account for minor technical delays; (2) the need for clarification on whether Members should notify the Secretariat about which notification option they choose; (3) issues with specific options in the annex, particularly regarding buffer zones inside EEZs; (4) questions about whether having multiple notification options would create complexity for the Secretariat's analysis; and (5) suggestions to allow for procedures beyond those listed in the annex.

39. During the TCC meeting, Japan proposed a one-year extension of paragraph 23 of CMM 2024-12 on VMS for research vessels to report position data through AIS instead of VMS. Japan noted many of its research vessels now have VMS and its understanding that this CMM does not apply to oceanographic research vessels that may incidentally capture small amounts of non-commercially exploited NPFC resources, such as plankton. With that understanding, and that the proposal was not made 30 days prior to the TCC meeting, Japan withdrew its proposal.

40. The TCC noted that while revised text in paragraph 11 did not include a date certain for notifying the Secretariat of transmission method that they will use to allow for later changes in methods, for the first time using the entry/exit notification procedure, Members committed to notifying the Secretariat by 1 January 2026. The TCC continued discussion on revisions to Option 2 in Annex 2 relating to vessel positions.
Recommendation: That the Commission adopt the proposed amendments to CMM 2024-12.

41. The Co-Lead of the SWG PD, Ms. Lindstedt, presented the proposed Regional Transshipment Observer Program (NPFC-2025-TCC08-WP13). She noted that the development of this program was defined as a priority at COM08. The SWG PD had accomplished substantial

intersessional work, with a large proportion of the text agreed among Members. Outstanding issues remaining in square brackets included: the inclusion of national observer programs in the regional transshipment observer program, qualifying characteristics of independent and impartial observers, the role of observers in collection of catch data during port offloading, how to reflect expected progress on electronic monitoring, and how to address the refusal of observers to deploy to vessels where safety concerns are identified.

42. The TCC held extensive discussion on the bracketed text within the proposal, including: the definition qualifiers of "external" and "non-governmental" for observer service providers, acknowledging different situations for different Members; observer duties for offloading in port; provision of internet connectivity to observers on vessels to ensure their communication capabilities; the timing for development of electronic monitoring systems; and the timeframe of notifying observers prior to a transshipment. The TCC was unable to reach consensus on bracketed text within several paragraphs.
Recommendation: That the Commission further consider the proposal for a new Transshipment Observer Program measure in NPFC-2025-TCC08-WP13 Rev.1, recognizing that some sections remain in square brackets.

43. Canada presented its proposal (NPFC-2025-TCC08-WP08) to amend CMM 2024-03 On Transshipment to require mandatory use of the online transshipment reporting system by January 1, 2026. The proposal would add language to paragraph 7 requiring all advance notifications, modifications, cancellations, and transshipment declarations to be submitted through the online system developed by the Secretariat. Korea offered to co-sponsor this proposal.

44. The Co-Lead of SWG PD, Ms. Lindstedt, introduced proposed amendments to the transshipment measure (NPFC-2025-TCC08-WP15) to align it with the proposed Regional Transshipment Observer Program, noting these amendments would streamline the text by removing sections that would be covered by the new standalone measure.

45. The Co-Lead of SWG Ops, Ms. DeMille, presented proposed amendments to CMM 2024-03 On Transshipment (NPFC-2025-TCC08-WP11) to clarify requirements for reporting all marine species in transshipment reports. The amendments would add language to paragraph 9 and both annexes requiring all species, including bycatch, to be recorded by species using their FAO code.

46. The TCC accepted Canada's offer to prepare a consolidated document that would incorporate all three proposals into a single draft amendment to the transshipment CMM, while maintaining clear attribution of the source of each proposed change.

47. The TCC discussed the three proposals to amend CMM 2024-03. Several concerns were raised regarding the mandatory use of the online system, including: (1) the need for provisions to address system unavailability; (2) suggestions to maintain the 50-nautical mile and 72-hour restrictions by removing "for 2024 only" language; (3) technical challenges in connecting national systems to the NPFC system; and (4) clarifying responsibility for submission (vessel or Member). Regarding the bycatch reporting amendments, there was a suggestion to add "all species retained" to avoid confusion between target and bycatch species.

48. The TCC discussed the consolidated proposal (NPFC-2025-TCC08-WP19), with paragraph 7 amendments requiring mandatory use of the online transshipment reporting system. Members extensively discussed implementation timing, with agreement to change the effective date from January 1, 2026 to April 1, 2026. The TCC also considered the linked amendments to paragraphs 15, 16, and 17 regarding notification timeframes and distances.

49. China noted that it is working actively with the Secretariat to develop an API connection that would enable direct transmission of data from its national transshipment system to the NPFC online transshipment reporting system. China indicated its understanding that such an API connection, once established, would meet the requirements in paragraph 7 regarding submission via the NPFC online transshipment reporting system. TCC noted the interpretation.

50. The TCC considered the remaining sections of the consolidated proposal.
Recommendation: That the Commission further consider the proposed amendments to CMM 2024-03, recognizing that some sections remain in square brackets.

Agenda Item 6. IUU Vessel List

6a. Recommendation for Provisional IUU Vessel List to the Commission

51. The Compliance Manager presented the draft IUU Vessel List (NPFC-2025-TCC08-WP01). The draft list contained three vessels nominated for inclusion on the Provisional IUU Vessel List.

52. Japan presented information regarding the Chinese vessel it nominated, explaining that the vessel's appearance differed from its NPFC registry photo, and it delayed boarding inspection for approximately two hours. Japan considered this a potential denial of HSBI.

53. China explained that the incorrect photo resulted from a staff error and a review process was established to prevent future mistakes. China maintained that the delay was for legitimate purposes and denied that any evidence was hidden.

54. Following bilateral discussion between Japan and China in the margins and discussion in TCC, Japan as the nominating Member expressed satisfaction on the actions taken by China. Taking into account these actions, the TCC agreed to remove the vessel nominated by Japan from the Provisional IUU Vessel List, with the inclusion of the following commitment from China recorded in the TCC Report:

"It is the commitment of China to have close cooperation with other Members of NPFC, including Japan, to have smooth and timely conducted HSBIs, and China will take effective measures to ensure its fishing vessels accept HSBIs in a timely manner."

55. Canada presented information regarding the two Chinese vessels (No. 2 and No. 3) it nominated. Both vessels were found with Pacific saury on board after closure of the fishery, with evidence of misreporting catch on board. For vessel No. 2, China reported that the investigation was concluded, that fines were imposed and paid, and that the illegal catch was confiscated. For vessel No. 3, China reported that the investigation was concluded, but the sanction process was still underway as the violation report was only received in late December.

56. The TCC discussed issues including China's domestic prohibition on retention of Pacific saury by purse seiners and its potential inconsistency with CMM 2024-08 to retain all catch of Pacific saury, and the adequacy of sanctions imposed against the master of the vessel. There were differing views on whether vessels should be listed when flag state action had been taken or was in progress.

57. Some Members expressed the view that China had taken effective action in response to the IUU fishing activities in question, as required under paragraph 17(b) of CMM 2024-02, including sanctions and confirmation of payment of the fines imposed for one of the two fishing vessels, and therefore that fishing vessel nominated by Canada should not be included on the provisional IUU Vessel List.

58. Other Members expressed the view that these were serious violations directly related to the conservation objectives of the Commission, and that further consideration of these cases was warranted at the Commission meeting. These Members raised concerns about whether the

sanctions imposed were specifically for violations of NPFC CMMs or for violations of domestic measures that may be inconsistent with NPFC CMMs.

59. Following further discussions, China proposed retaining only the third vessel on the provisional IUU Vessel List while removing the second vessel.

60. China provided further information indicating the measures it took as a flag state related to non-compliance with misreporting and measures to address fishing without a quota. China stated it will commit to monitor purse seiners and providing guidance to ensure vessels are not directed fishing for Pacific saury and are retaining and reporting catch consistent with NPFC measures, and if they were found to do such directed fishing, China provided additional assurances that they would carry out punishment such as considering to force the responsible company to scrap the offending vessels. The TCC agreed to remove the second vessel nominated from the Provisional IUU Vessel List.
Recommendation: That the Commission consider the Provisional NPFC IUU Vessel List containing one vessel proposed by Canada (Annex X).

6b. Recommendations for amendments to current NPFC IUU Vessel List to Commission

61. The Compliance Manager presented information regarding the NPFC IUU listed fishing vessel AN TON (NPFC-2025-TCC08-WP04). The Secretariat had received information from Bangladeshi authorities and China that the vessel had been scrapped. China provided further explanation on the vessel in IP07.

62. The TCC discussed the sufficiency of evidence for the scrapping, and the appropriate procedure for removing a vessel from the IUU Vessel List. Several Members noted that according to CMM 2024-02 (paragraph 19), removal can only be initiated by the flag State (Comoros) of the vessel.

63. Some Members expressed their concern about the transshipment activities undertaken by Chinese fishing vessels with the An Ton in 2023 (then named Wan Ton) while the vessel was still on the NPFC IUU List regardless of China's interpretation that the vessel was no longer an IUU Vessel as it had changed its flag and ownership, and considered these activities are inconsistent with the NPFC Convention and CMM 2024-02.

64. The TCC could not reach consensus on recommending removal of the vessel from the NPFC IUU Vessel List, and requested that the Secretariat continue to seek confirmation from the last flag of the vessel (Comoros) and gather additional evidence.

65. The Secretariat reported that it had contacted authorities in Comoros, who acknowledged receipt of the request for information and advised they were consulting and would provide more information when available. The TCC noted that it lacked sufficient information at this time to consider removal of the vessel from the NPFC IUU Vessel List.

Recommendation: That the Commission note that the TCC did not propose any changes to the current NPFC IUU Vessel List.

Agenda Item 7. Compliance Monitoring Scheme

7a. Draft Compliance Reports for 2024

66. The Compliance Manager presented the Draft Compliance Report, which contained data retrieved from various sources on compliance with the 78 obligations listed in Annex 2 of CMM 2024-13. The sources included the implementation reports submitted by Members, annual reports, HSBI reports including aerial surveillance, and reviews of VMS and transshipment data. The draft report highlighted seven instances of potential non-compliance for three Members regarding obligations under five CMMs. The main instance of potential non-compliance related to the vessel registry and vessel marking (CMM 2023-01, paragraph 5), with 13 incidents recorded for three Members. Other instances of potential non-compliance were found in obligations under the transshipment measure, the Pacific saury measure CMM 2024-08, HSBI CMM 2024-09 (related to the submission of an annual report), and CMM 2024-15 on marine pollution.

7b. Develop Provisional Compliance Report

67. The TCC extensively discussed the format and methodology of the draft compliance report and this first implementation of the Compliance Monitoring Scheme (CMS). Several suggestions for improvement were made, including consideration of:

(a) Providing more detailed information within the draft report about compliance status for all obligations, not just highlighting potential non-compliance;
(b) More clearly defining “Priority Non-Compliant” status in cases besides repeated non-compliance;
(c) Clarifying the methodology used for assessing compliance, especially for quantitative obligations;
(d) Creating audit points for each obligation to guide future assessments;
(e) Focusing on Members’ actions in response to violations rather than individual vessel compliance;
(f) Define a more clear process for assessing Members’ actions in response to violations of individual vessels.

68. The Secretariat explained they considered all available data sources when assessing the obligations, with most identified issues coming from HSBI reports. They noted a targeted approach was taken with VMS data gaps to avoid flagging thousands of minor issues.

69. The TCC agreed to proceed based on the following process for developing the Provisional Compliance Report: (1) examine the seven highlighted areas indicating potential non-compliance identified by the Secretariat; (2) consider any other areas of potential non-compliance identified by Members; and (3) review the list in Annex 2 of obligations to be assessed. The section of the report containing detailed information on specific cases would serve as background rather than each case being individually assessed.

70. The TCC reviewed each area of potential non-compliance highlighted by the Secretariat.

71. Regarding China's vessel marking issues (CMM 2024-01, paragraph 5), eight incidents were identified through HSBI events. For two vessels, China clarified that the small boats in question were rescue boats required by Chinese regulations, not fishing skiffs, and therefore were not subject to marking requirements. For other vessels, China reported that sanctions had been imposed. China provided additional evidence of sanctions imposed. Based on the information provided by China, the TCC determined this case to be "Compliant."

72. Regarding Russia's vessel marking issues (CMM 2024-01, paragraph 5), five vessels were identified through aerial surveillance as having inadequate markings. Russia explained that sanctions had been applied and the completeness of markings was verified. Members disagreed on whether additional alphanumeric identifiers on the hull constituted a violation of paragraph 4 of Annex 2, with Russia maintaining these were boarding numbers required by national regulations. Based on the information provided by Russia to verify the sanctions issued the TCC determined this case to be "Compliant," noting that the CMM would require minor amendment to prevent similar cases in the future for Members requiring domestic and other markings.

73. Regarding Chinese Taipei's vessel marking potential non-compliance issue (CMM 2024-01, paragraph 5), Chinese Taipei explained that when the inspection was conducted, the vessel's radio call sign was temporarily obscured by boxes, which were immediately removed upon detection. The vessel had been sanctioned in accordance with domestic law. Based on the information provided by Chinese Taipei, including a link to verify the sanctions issued, the TCC determined this case to be "Compliant." Japan pointed out many cardboard boxes were placed on the deck together with an awning over these boxes.

74. Regarding transshipment reporting potential non-compliance issues related to China (CMM 2024-03, paragraph 8), the Secretariat noted this case was also being considered under the draft IUU vessel list. Several Members suggested that cases discussed under the IUU agenda item should not be duplicated in the CMS process to avoid inconsistent outcomes. The TCC determined the case to be “Flag State Action Ongoing” pending the completion of sanctions procedures by China.

75. Regarding China’s Pacific saury potential non-compliance issue (CMM 2024-08, paragraph 10), questions were raised about whether China had exceeded its catch limit following closure of its fishery. China clarified that even with confiscated illegal catch added to their reported catch, they remained below their total catch limit. The TCC determined the case to be “Unable to be Assessed at this time” as there was an issue of differences in interpretation of the CMM. Further clarity and possible amendment of the measure would be needed to clarify whether or how it applies to only targeted fishing or includes bycatch.

76. Regarding Russia’s delayed submission of its final annual report (CMM 2024-09, paragraph 2), which was received on March 14, 2025, after the February 15 deadline, the TCC determined this to be a case of “Delayed Submission.”

77. Regarding Chinese Taipei’s identified marine pollution potential non-compliance issue (CMM 2024-15, paragraph 8) concerning the discharge of incinerator ashes from plastic products into the sea, Chinese Taipei reported that the vessel had been sanctioned and required to further improve its recycling procedures. Upon reviewing the sanction information provided, the TCC determined this case to be “Compliant.”

78. The TCC also considered additional potential non-compliance issues raised by Members:

79. Some Members raised concerns about China’s compliance with CMM 2024-02 paragraphs 24(b) and 24(f), citing information in IP07 indicating that Chinese vessels had engaged in transshipment activities with a vessel (WAN TONG) on the NPFC IUU Vessel List during October to December 2023. China responded that this was part of a settlement strategy to persuade the vessel’s new owner to scrap the vessel. The TCC determined these cases to be "Non-Compliant."

80. The EU expressed concern that the commitment to freeze fishing effort in some fisheries, including chub mackerel, had not been fulfilled by some Members. The EU noted that based on data provided by Members, current effort levels appeared to exceed those from historical years before 2019 when the measure was adopted.

81. The US and the EU also raised concerns about possible non-compliance with effort limits in CMM 2024-07 for Chub mackerel and CMM 2024-11 for Japanese sardine, suggesting significant growth in authorized vessels by China and Russia. China responded that they had frozen their fleet at 109 vessels since 2018, and Russia stated they had not increased beyond historical levels. As the TCC was still discussing how to define historical existing levels, the TCC determined these cases to be "Unable to be Assessed at this time." The US noted that it concurred with that assessment at this stage of the compliance monitoring scheme and related work, but that if there is not adequate progress on defining historical existing level, it may be necessary to reconsider non-compliance assessments in the future based on the information available.

7c. List of obligations for consideration for the Compliance Monitoring Scheme in 2025

82. Following discussion on the process for identifying obligations to be assessed, the TCC agreed to add the following to the list of obligations for consideration for the Compliance Monitoring Scheme in 2025:

(a) Paragraph 16 of CMM 2024-08 for Pacific saury regarding retention requirements;
(b) Paragraph 31 of CMM 2024-09 regarding timely submission of High Seas Boarding and Inspection reports; and
(c) Paragraphs 5, 7, 9, and 11 of CMM 2024-16 on anadromous species.
(d) Paragraph 2 of CMM 2023-01 on the vessel registry, though there was not agreement from all Members on adding this to the list of obligations.

83. Considering that some CMMs may become effective before others, the paragraph numbers and contents may change following decisions at the Commission meeting. The TCC agreed that the final review of obligations to be assessed under Annex 2 of the CMS CMM should occur at the Commission meeting.

84. The TCC adopted the Provisional Compliance Monitoring Report including the Executive Summary.

Recommendation: That the Commission consider the Provisional Compliance Monitoring Report adopted by the TCC, along with the attached Executive Summary.

Recommendation: That the Commission consider the TCC's list of obligations for consideration for the Compliance Monitoring Scheme in 2025.

Agenda Item 8. Transshipment

8a. Secretariat Report on 2024 Activity

85. The Fisheries and Data Analysis Consultant, Dr. Jihwan Kim, presented the 2024 Transshipment Overview (NPFC-2025-TCC08-IP08 Rev.1). In 2024, 52% of total catch was transshipped, with the number of events exceeding 2,000, similar to 2023. Other Transshipment Activities (OTAs) exceeded 2,500 events, a slight increase from 2023. Most transshipments occurred within the Convention Area, with only five events occurring outside. The volume per transshipment event averaged 147 metric tons, ranging from 4 to 1,784 metric tons. An online application launched in 2023 for document submission had seen increased usage following system improvements and a workshop in 2024. An API was developed in late 2024 to enable automated submission, with one Member currently integrating their system with the NPFC API, which should eliminate manual entry by the 2024 fishing season. The updated transshipment data visualization tools now include a geographic map allowing users to filter events by time and region. The map displays planned fish transshipments, completed transshipments, and planned OTAs.

86. One Member inquired about reported discrepancies in OTA records, the transshipment of Alaska pollock, and the lack of information regarding implementation and reporting from existing observer requirements. The Secretariat explained that inconsistencies in OTA numbers occurred because many events were submitted via email, requiring manual alignment with notification reports, creating challenges in tracking cancellations effectively. Regarding the observer reports, the Secretariat noted that while the current observer form does not contain extensive information, a sample review of 100 reports from approximately 3,000 had not identified any violations.

87. Several Members emphasized the importance of analyzing observer information as a source of data to support compliance processes, and one Member requested that future reports include sections summarizing information on observers.

88. The TCC noted the uncertainties and inaccuracies in some figures presented in the transshipment overview, and the Secretariat prepared a further revision to the report (NPFC-2025-TCC08-IP08 Rev.3) to address these issues.

Agenda Item 9. Vessel Monitoring System

9a. Secretariat Report on Implementation

89. The Fisheries and Data Analysis Consultant presented the 2024 VMS Overview (NPFC-2025-TCC08-IP09 Rev.1) as required by paragraph 24 of CMM 2024-12. The system had demonstrated robust performance during its three years of operation from 2022 to 2024, with technical issues such as SSL certificate management and data interruption promptly addressed. The Secretariat actively collaborated with Member FMCs to address data discrepancies and

enhance overall VMS data quality. Data was shared on unique vessels present in the Convention Area during 2024.

90. The Secretariat identified vessels operating under expired authorization status, noting that this does not necessarily signal unauthorized fishing activities as investigation into previous cases determined that the vessels were typically WCPFC carrier vessels or squid vessels steaming to the SPRFMO Convention Area. The Secretariat also outlined three proposed options for notifying vessel entry and exit to and from the Convention Area. The presentation included a comparison of positions recorded in transshipment documents with VMS data, revealing a higher rate of location discrepancy for OTA events compared to fish transshipment. On investigation of AIS data as a supplementary data source as instructed by TCC07, the Secretariat found that free AIS data available via public websites was found to be labor intensive for large-scale use, while overlaying AIS data on the VMS platform would cost approximately $5,000 per year for real-time and historical data access.

91. Several Members expressed concerns about using AIS data, citing its unreliability and potential for manipulation. Members did not support spending budget on purchasing AIS data, preferring to rely on more accurate and reliable VMS data.

92. The Secretariat confirmed that it had sent relevant data regarding vessels with expired authorization status and location discrepancies to the concerned Members for their review.

Agenda Item 10. High Seas Boarding and Inspection

10a. Secretariat Report

93. The Compliance Assistant, Mr. Jumpei Hinata, presented the HSBI summary for 2024. In the past year, 53 inspections were conducted by four inspection Members, twice the number conducted in 2023. No violations were noted in 42 reports, while violations were noted in 11 reports, with three classified as serious violations. Over 11% of active vessels were inspected, with approximately 72% of inspected vessels being either purse seiners, jigging vessels, or carrier vessels. The most common violations related to vessel marking infringements. Three serious violations were reported: obscuring vessel marking, Pacific saury fishing during a closed time, and unauthorized fishing. Two of these cases resulted in nominations to the 2025 draft IUU list. The Secretariat highlighted that 2024 saw a record number of at-sea inspections, although the number of identified violations remained consistent with the previous three years. Initiatives planned for 2025 include improving data collection and analysis, harmonizing boarding remarks and violation classifications, updating the implementation plan to make the HSBI webpage more user-friendly, and developing a feature for reporting aerial surveillance results within the HSBI system at an estimated cost of $7,200.

94. The Secretariat prepared and distributed a revised version of the HSBI report (Rev.1) based on comments from several Members who noted that updates had not been transferred from the Fisheries Overview into this paper.

95. One Member suggested the addition of a column including the total number of fishing days to provide a more informative basis for comparing inspection coverage in future Secretariat reports. Another Member requested for “Violations identified in HSBI” to be renamed to “Potential non-compliance” and maintaining email as an option for HSBI notifications and reports alongside the online entry system. Some Members suggested more balanced inspection coverage across Members.

10b. Members Reports

96. Noting that more information on HSBI is provided in Members’ Annual Reports, China, Canada, the USA, and Japan presented brief reports of their HSBI activities for 2024.

Agenda Item 11. Review of Applications for CNCP Status

97. TCC noted the lateness of the application for CNCP Status of Panama and highlighted the importance of meeting submission deadlines established within the Rules of Procedure.

98. Panama explained that it is seeking CNCP status, emphasizing its commitment to sustainable management of fisheries resources in the North Pacific and to complying with the Convention and CMMs of NPFC. Panama outlined steps taken to strengthen its monitoring and control mechanisms, including the adoption of five resolutions in 2024-2025 related to observer programs, transshipment regulation, port controls, electronic monitoring, and vessel registration procedures. Panama noted their fleet consists primarily of carrier vessels that may engage in transshipmentd activities, and explained that their national observer program had been implemented since October 2024, with both Panamanian and foreign observers.

99. The TCC considered Panama’s application but was unable to reach a consensus on recommending approval. While several Members expressed general support for Panama’s application for CNCP status, several Members also raised several questions regarding Panama’s ability to effectively monitor and control its flagged vessels, referencing past issues with Panamanian-flagged vessels in the NPFC Convention Area. Some Members suggested that if Panama were granted CNCP status, their vessels should only begin transshipment activities in the Convention Area following the implementation of the NPFC regional observer program, which would begin on April 1, 2026. Panama expressed willingness to wait before commencing transshipment activities in the Convention Area should that be a

condition of their granting of CNCP status. The EU requested that Panama provide ahead of the annual meeting of the Commission additional written information including concrete improvements in its operational capacity to monitor their flag fishing vessels in complement to the explanations made on the floor in support of its application.

Recommendation: That the Commission further review Panama's application for CNCP status for 2025-2027, noting that Panama was requested to provide more information in writing about their monitoring capabilities ahead of the Commission meeting to address the concerns raised by the TCC.

Agenda Item 12. Climate Change

100. The TCC Chair noted this is a standing agenda item and there was no further discussion.

Agenda Item 13. Cooperation with Other Organizations (Cont'd)

13a. MoU with SPRFMO

101. The Secretariat informed the TCC that NPFC and SPRFMO had finalized an MoU, allowing for enhanced cooperation on best practices and technical work related to shared ecosystems and similar species coverage in the Pacific.

13b. MoU with WCPFC

102. The Secretariat informed the TCC that NPFC had finalized an MoU with WCPFC in summer 2024, enabling collaborative work on technical systems and data sharing. It was noted that WCPFC had agreed to share their document management system coding with NPFC, creating opportunities for cost savings and increased efficiency in database operations.

13c. NPFC-NPAFC Workplan

103. The NPAFC Executive Director, Mr. Yoshikiyo Kondo, provided a verbal update on cooperation with NPFC. He expressed appreciation for the adoption of the CMM 2024-16 on Anadromous Species and NPFC's contribution to the IYS North Pacific high seas expedition in 2022. He noted NPAFC is continuing to implement the five-year work plan endorsed by both organizations' Commissions in 2023. Mr. Kondo highlighted several areas of cooperation from an enforcement perspective, including exchange of information on suspicious fishing vessels, IUU vessel lists, and bycatch data of Pacific salmon. NPAFC prepared a draft Terms of Reference for a secure SharePoint to facilitate this information exchange, respecting NPFC's data confidentiality policy. Mr. Kondo informed the TCC that NPAFC had been seeking an opportunity to hold a joint workshop with NPFC and prepared a concept paper, but decided to first hold an NPAFC workshop on transshipment in May 2026 in conjunction with their annual meeting before revisiting the potential joint workshop. He expressed NPAFC's strong willingness to continue cooperation with NPFC.

104. Members expressed various views on cooperation with NPAFC. Some Members expressed support for NPAFC's approach to hosting a workshop within NPAFC's purview focusing on interactions between NPFC fisheries and anadromous catch. It was noted that all NPAFC Members are also NPFC Members and suggestions could be raised directly in NPFC or NPAFC meetings. One Member, not being a Member of NPAFC, raised considerations related to budget implications, the appropriate organizational level for cooperation discussions, and a request for equal participation opportunities for NPFC Members wishing to participate in NPAFC meetings.

105. Several Members sought clarification on NPAFC's intentions regarding the joint workshop and noted concerns for future consideration including budgetary implications, process issues around joint workshops between international bodies, clarity of goals and outcomes, and consistency with NPFC's rules of transparency. Mr. Kondo confirmed that NPAFC was suspending the joint workshop discussions and would work towards organizing an NPAFC workshop in 2026 focused on fisheries interactions with anadromous species and would provide opportunity for NPFC input.

13d. IMCS Network

106. As the International Monitoring, Control and Surveillance (IMCS) Network was not present, the Secretariat provided a verbal update on collaborative activities between NPFC and the IMCS Network. The Secretariat highlighted that NPFC had benefited significantly from involvement with the network since joining. IMCS had sponsored a visit by NPFC's web database service provider to Tokyo in 2024, helping planning purposes. Two initiatives were underway: an IUU vessel list hub that would allow RFMO secretariats easier access to up-to-date information when cross-listing vessels, and a combined registry of authorized vessels using publicly available information with a search feature.

107. One Member suggested that NPFC consider developing an MoU with IATTC, noting that the two organizations have overlapping Convention Areas, and the relevant recommendation from the Performance Review, and the FAO transshipment guidelines highlight the importance of data sharing between overlapping RFMOs.

108. Several Members agreed with this suggestion, and the TCC discussed the procedure in terms of timeline and who would be responsible in producing the draft MoU.
Recommendation: That the Commission task the Secretariat with drafting an MoU with IATTC, to be circulated to Membersvia electronic correspondence for input before being submitted as an information paper to the IATTC meeting in August 2025.

Agenda Item 14. Performance Review Recommendations Relevant to TCC

109. The TCC Chair presented an update (IP06) on the status of the Performance Review Recommendations relevant to TCC.

110. One Member recognized the helpful progress made by the Commission on the performance review recommendations and the table with status updates from the Secretariat and TCC Chair. However, they noted that the tasking from COMM08 for the Secretariat to work with chairs to update the table and then solicit intersessional feedback from Members was not followed and there is not adequate time to discuss the details at this meeting. The Member requested the TCC Chair work with the Secretariat to update the table and send it to Members for intersessional input via email so there is a Member-driven process on Commission priorities taking into account the Performance Review recommendations.

Recommendation: That the Commission task the TCC Chair and Secretariat to continue working on tracking the performance review recommendations relevant to TCC and seeking Member input intersessionally consistent with COM08 tasking.

Agenda Item 15. Other Matters

15a. Consideration of Recommendations for TCC Chair/Vice Chair

111. The TCC noted that the terms of the current TCC Chair, Ms. Alisha Falberg (USA), and Vice Chair, Ms. Amber Lindstedt (Canada), were ending at the conclusion of TCC08.

112. Following nominations from Members, the TCC recommended to the Commission that Ms. Alisha Falberg (USA) serve as TCC Chair and Ms. Amber Lindstedt (Canada) serve as TCC Vice Chair for another two-year term.

Recommendation: That the Commission renew the terms of Alisha Falberg (USA) to serve as TCC Chair and Amber Lindstedt (Canada) to serve as TCC Vice-Chair.

15b. Historical Catch Level

113. The SWG Ops Co-Lead, Ms. Patricia DeMille, reported on intersessional work of the SWG to compile data on historic fishing levels into a standard format, covering 2009 to 2023 by target species with a breakdown by gear type. The SWG Ops was unable to reach consensus on how to identify the specific year or years that would constitute the historical existing level.

114. The EU noted the long lasting and inconclusive discussions on the definition of historical levels of authorized vessels in NPFC and questioned the relevance of this metric both in terms of monitoring compliance and effectively restricting fishing effort in line with the spirit and intent of the NPFC CMMs that include this metric. Japan pointed out Members have been

implementing historical existing effort provisions based on their interpretation which could be different among Members, and further discussion is needed to define a uniform interpretation on this matter.

115. Following extensive discussion, the TCC agreed to recommend that the Commission consider the following: (a) Continue work on this issue, considering options discussed at TCC; (b) compile in one document when each CMM mentioning historical level was first adopted; (c) Seek clarity on data sources from Members for the compiled table; (d) Work to reconcile Member data with Secretariat records; (e) Consider amending CMMs that reference historical fishing level to provide greater clarity; and (f) Further consider criteria proposed by Members for defining historical fishing level, including: (i) a period from CMM adoption year minus one through adoption year minus three; (ii) A three-year period from the CMM adoption year going back three years; (iii) A timeframe reflecting the development of the fishery; or (iv) Other appropriate timeframes from one to multiple years.

Recommendation: That the Commission consider and carry forward work on historical fishing levels, taking into account the criteria, options and considerations identified by the TCC.

Agenda Item 16. Review and Endorsement of TCC Work Plan for 2025/2026

116. The TCC reviewed the TCC/SWG Work Plan for 2025/2026 (NPFC-2025-TCC08-WP06) against the progress made to date and in consideration of new items of work arising from TCC08.

Recommendation: That the Commission revise the draft Work Plan developed by the Secretariat, including work completed, and consider further revisions, then task TCC and relevant SWGs with the activities in the revised Work Plan (Annex X).

Agenda Item 17. Recommendations to the Commission

117. The TCC recommended the following to the Commission:

(Agenda Item 3)

(a) That the TCC Chair and SC Chair continue to work intersessionally towards identifying the potential data needs for a broader regional observer program.

(Agenda Item 4)

(b) That the Commission adopt the NPFC Rules of Transparency for TCC (NPFC-2025-TCC08-WP16).(Annex D)

(c) That the Commission task the SWG Ops in the intersessional period with: (a) compiling a list of all serious violations and vessel-based measures into a guidance document or inspector's aid, noting that these would be guidelines only and not measures; and (b) developing a

document outlining more robust actions and responsibilities for flag states when a serious violation is detected and the flag state is notified.

(Agenda Item 5)

(d) That the Commission further consider the consolidated proposal on port state measures, taking into account the discussions at TCC.

(e) That the Commission task the TCC and SC to continue work intersessionally on the proposal for minimum standards for data collection, with the goal of adopting a measure in the near future.

(f) That the Commission adopt the proposed amendments to CMM 2024-12.

(g) That the Commission further consider the proposal for a new Transshipment Observer Program measure in NPFC-2025-TCC08-WP13 Rev.1, recognizing that some sections remain in square brackets.

(h) That the Commission further consider the proposed amendments to CMM 2024-03, recognizing that some sections remain in square brackets.

(Agenda Item 6)

(i) That the Commission consider the Provisional NPFC IUU Vessel List containing one vessel proposed by Canada (Annex X).

(j) That the Commission note that the TCC did not propose any changes to the current NPFC IUU Vessel List.

(Agenda Item 7 (CMS))

(k) That the Commission consider the Provisional Compliance Monitoring Report adopted by the TCC, along with the attached TCC Chair's Executive Summary.

(l) That the Commission consider the TCC's list of obligations for consideration for the Compliance Monitoring Scheme in 2025.

(Agenda Item 11)

(m) That the Commission further review Panama's application for CNCP status for 2025-2027, noting that Panama was requested to provide more information in writing about their monitoring capabilities ahead of the Commission meeting to address the concerns raised by the TCC.

(Agenda Item 13)

(n) That the Commission task the Secretariat with drafting an MoU with IATTC, to be circulated to Members via electronic correspondence for input before being submitted as an information paper to the IATTC meeting in August 2025.

(Agenda Item 14)

(o) That the Commission task the TCC Chair and Secretariat to continue working on tracking the Performance Review recommendations relevant to TCC and seeking Member input intersessionally consistent with COM08 tasking.

(Agenda Item 15)

(p) That the Commission renew the terms of Alisha Falberg (USA) to serve as TCC Chair and Amber Lindstedt (Canada) to serve as TCC Vice-Chair.

(q) That the Commission consider and carry forward work on historical fishing levels, taking into account the criteria, options and considerations identified by the TCC.

(Agenda Item 16)

(r) That the Commission revise the draft Work Plan developed by the Secretariat, including work completed, and consider further revisions, then task TCC and relevant SWGs with the activities in the revised Work Plan (Annex X).

Agenda Item 18. Next Meeting

118. ***Recommendation:*** That the Commission hold the next TCC meeting in conjunction with the next Commission meeting.

Agenda Item 19. Adoption of the Report

119. The report was adopted by consensus.

Agenda Item 20. Close of the Meeting

120. The TCC meeting was closed at 20:36, JST, on 21 March 2025

Annexes:

Annex A – Agenda

Annex B – List of Documents

Annex C – List of Participants

Annex D – Rules of Transparency

Please refer to the NPFC website for the complete annexes.

7th Meeting of the Finance and Administration Committee

22, 24 and 25 March 2025

Osaka, Japan (Hybrid)

Meeting Report

Agenda

1. Opening of the Meeting

2. Appointment of Rapporteur

3. Adoption of Agenda

4. Financial Statement
    a. Audit Report for the 2023/2024 fiscal year
    b. Status of Member Contributions
    c. Secretariat financial updates to 31 January 2025:
        i. for 2024/2025 fiscal year (General Fund)
        ii. Working Capital Fund
        iii. Voluntary Contribution Funds
        iv. Special Project Fund
        v. Repatriation Fund

5. Administration Matters
    a. Staffing considerations
    b. Pay and benefits system (closed session)
        i. General Service Staff
            1. Pay
            2. Benefits
        ii. Manager and Executive Secretary Staff
            1. Pay
            2. Benefits
    c. 2024 Internship and Secondment programs (closed session)
    d. Proposed revisions to the Internship and Secondment Program (closed session)
    e. Proposed revisions to the Staff Regulations
    f. Potential revisions to the Financial Regulations (e.g., approach for the transshipment observer scheme)

6. Performance Review updates and items of relevance to FAC

7. Secretariat's Work Plan: Budget Estimates for 2025/2026 to 2028/2029
    a. Secretariat Work Plan 2025/2026 including staffing

b. Budget estimates for 2025/2026 and 2026/2027 and indicative budget estimates for 2027/2028 and 2028/2029

8. Other matters
    a. Consideration of Recommendations for FAC Chair/Vice Chair

9. Next meeting

10. Recommendations to the Commission

11. Adoption of the Report

12. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 7th Meeting of the Finance and Administration Committee (FAC) was held in a hybrid format, with participants attending in-person in Osaka, Japan, or online via WebEx, on 22 March 2025, and was attended by Members from Canada, China, the European Union (EU), Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America (USA), and Vanuatu. Panama and Pew Charitable Trusts (Pew) attended as observers. The meeting was opened by Mr. Dan Hull (USA), who served as the FAC Chair.

Agenda Item 2. Appointment of Rapporteur

2. Mr. Jacques Chaumont was appointed as the Rapporteur.

Agenda Item 3. Adoption of Agenda

3. The FAC Chair proposed minor changes to the ordering of discussion on subitems within Agenda Item 5, due to the confidential nature of personnel matters.

4. The agenda was adopted (Annex A) as amended. The List of Documents and List of Participants are attached (Annexes B, C).

5. The Executive Secretary, Dr. Robert Day, outlined the logistical arrangements for the meeting.

Agenda Item 4. Financial Statement

4a. Audit Report for 2023/2024 fiscal year

6. The NPFC Auditor's Report for the 2023/2024 Financial Year (NPFC-2025-FAC07-IP01) was taken as read, with supplementary comments from the Executive Secretary regarding the transition to commercial financial software, a transfer to the General Fund from the Special Projects Fund, and the General Fund surplus being transferred to the Working Capital Fund as well as acknowledging the delay in the audit.

   Recommendation: That the Commission adopt the NPFC Auditor's Report for the 2023/2024 Financial Year.

7. One Member noted that following paragraph 22 of the Financial Regulations, the Executive Secretary shall require, as part of observations of the external auditors, that the external auditors provide specific recommendations for the cap of the Working Capital Fund at the amount equivalent to the funds required to sustain the Commission's operations for set number of months. That Member stated that the information related to this cap should be included in the next external audit.

4b. Status of Member Contributions

8. The Executive Secretary reported on the status of Member contributions for 2024/2025 (NPFC-2025-FAC07-WP01 Rev.1). As of 5 March 2025, payments of 170,463,481 (JPY) had been received with 116,241 (JPY) outstanding as accounts receivable from Russia. The Executive Secretary noted that Russia was expected to make the final remaining contribution during the meeting.

9. The Executive Secretary notified the FAC prior to the end of the meeting that all Member contributions for 2024/2025 were fully paid.

10. The FAC accepted the report from the Secretariat on Member contributions.

4c. Secretariat financial update to 31 January 2025

i. for 2024/2025 fiscal year (General Fund)

11. The Executive Secretary presented the Statement of Income and Expenditure for the year ending 31 March 2024 (2023/2024 fiscal year) and unaudited values for 2024/2025 (NPFC-2025-FAC07-WP01 Rev.1). He noted that expenditures as of 31 December 2024 were 55,382,669 (JPY), with significant expenses still pending for the SC09 related meetings, database projects, and COM09 related meetings. Projected expenditures were expected to reach approximately 91% of the appropriated funds.

    Recommendation: That the Commission adopt the financial update to 31 January 2025 for the 2024/2025 fiscal year, including the statement of income and expenditures for the year ending 31 March 2024 (2023/2024 fiscal year) and unaudited values for 2024/2025.

12. One Member requested that, considering some discrepancies between the information received prior to the meeting and presented during the meeting, revised versions of working papers be provided when updates occur, to ensure members have clarity on expenditures relative to the budget.

13. Some Members recalled that at FAC06, the Secretariat was requested to report on what kinds of contractual services it engaged in the previous year and what outputs it received from those

services. The Executive Secretary acknowledged this oversight and committed to providing this information in the future.

Recommendation: That the Commission direct the Secretariat to provide a report on contractual services engaged and outputs received, as requested in paragraph 33 of the FAC06 Final Report.

ii. Working Capital Fund

iii. Voluntary Contribution

iv. Special Project Fund

v. Repatriation Fund

14. The Executive Secretary reported on the status of the other funds, including the Working Capital Fund, the Voluntary Contribution, the Special Project Fund, and the Repatriation Fund (NPFC-2025-FAC07-WP01 Rev.1).

15. Several Members raised questions about the Working Capital Fund cap referenced in paragraph 22 of the Financial Regulations, which states that "Transfers to the Working Capital Fund shall be capped at an amount equivalent to the funds required to sustain the Commission's operations for a set number of months."

16. The Executive Secretary noted that while the practice has been to maintain approximately one year of operating funds, this had not been formally established. Several Members inquired whether the Working Capital Fund cap should be increased or more formally decided.

17. Regarding the Working Capital Fund, one Member requested that information about the Working Capital Fund cap be included in future audit reports, as required by the Financial Regulations paragraph 22. Another Member suggested reviewing practices of other RFMOs with similar size and mandate to inform the determination of an appropriate cap.

    Recommendation: That the Commission direct the Secretariat to analyze past discussion by the FAC and options for the Working Capital Fund cap consistent with the Financial Regulations, examine past history of how that number of months has been determined, and present options to FAC08 for determining the optimal number of months of operating funds to be available in the Working Capital Fund for the Commission.

18. The FAC thanked Canada, China, the United States, and Panama for their voluntary contributions.

19. The EU announced its intention to provide a voluntary contribution of approximately 50,000 (EUR) to support the Secretariat in data collection and processing, particularly for SC- and TCC-related activities.

20. The FAC noted the status of other funds.

Agenda Item 5. Administration Matters

5a. Staffing considerations

21. The Executive Secretary presented a report assessing the NPFC's staffing, capabilities and needs (NPFC-2025-FAC07-WP04) highlighting the increased activities requiring support from the Secretariat. The report noted that despite the expansion of operations, including the regional Vessel Monitoring Scheme, transshipment reporting, and stock assessment methodologies, the Secretariat has maintained its original complement of staff while investing in contract and technological solutions to manage the increased workload. The Executive Secretary also noted the support and additional capacity provided to the Secretariat through the role of secondee and interns.

22. The FAC expressed appreciation for the hard work of the Secretariat staff in handling a wide range of work with limited resources.

23. One Member expressed the view that they did not see benefits in expanding the level of Secretariat staff at this time and supported continuing the practice of using contractors.

24. The Executive Secretary requested that Members consider the resource implications for the Secretariat when proposing new CMMs. He noted that while there is no formal process requiring cost assessments for new measures, Members should be mindful of the costs of technology development and potential staffing cost implications.

25. One Member suggested that NPFC consider implementing a requirement for Members to attach a cover sheet when submitting proposals for new measures, indicating potential additional costs or workload for the Secretariat. Another Member noted that while they agreed on the importance of considering the financial implications of new measures, they had reservations about implementing requirements that could deter the development and submission of proposals to the Commission, as well as their adoption.

5b. Pay and benefits system

26. Discussions under Agenda Item 5b were carried out in a closed session due to the confidential nature of personnel matters.

i. General Service Staff

27. The Executive Secretary provided a progress report and proposal on issues related to General Service staff pay in response to the tasking from FAC06 and COM08 (NPFC-2025-FAC07-WP05).

28. The FAC thanked the Executive Secretary for providing the progress report. The FAC acknowledged the complexities of addressing these issues, as outlined in the Executive Secretary's report. The FAC recognized the importance of the Secretariat having competitive and equitable pay scales and remuneration to support the work of the Commission but noted that additional information and clarification were needed before making specific recommendations.

    Recommendation: That the Commission direct the Secretariat and an ad hoc intersessional correspondence group of the FAC to develop clearer options and recommendations on staff pay scales for both General Service and Professional/Director level positions for consideration at FAC08, with a view to making recommendations to the Commission at COM10.

ii. Manager and Executive Secretary Staff

29. The Executive Secretary provided a progress report and proposal on issues related to Manager and Executive Secretary staff pay (NPFC-2025-FAC07-WP09).

30. The FAC thanked the Executive Secretary for his efforts, acknowledging the complexities of this issue, and recognizing that it is similar in nature to the General Service staff pay issue.

    Recommendation: That the Commission maintain the current approach to Manager and Executive Secretary staff pay for fiscal year 2025/2026 while additional work continues intersessionally to consider clear options and recommendations on Professional and General Service salaries.

5c. Proposed revisions to the Staff Regulations

31. Discussions under Agenda Item 5c were carried out in a closed session due to the confidential nature of personnel matters.

32. The Executive Secretary presented proposed revisions to Staff Regulation 8.1 regarding social security benefits (NPFC-2025-FAC07-WP06). The proposal suggested modifications to address health insurance, workers accident insurance, and retirement fund provisions.

33. The FAC discussed and endorsed the proposal to update Staff Regulation 8.1 to better reflect current practices and improve benefits coverage, including the addition of workers' accident insurance for international staff.

    Recommendation: That the Commission adopt the proposed revisions to Staff Regulation 8.1, with the removal of the phrase "as outlined in NPFC Policy" for clarity and to implement the Secretariat's approach to provide staff with social security benefits beginning in the 2025/2026 fiscal year.

    Recommendation: That the Commission direct the Secretariat to develop an applicable NPFC Social Security Policy for consideration of FAC08.

5d. Potential revisions to the Financial Regulations (e.g., approach for the transshipment observer scheme)

34. The TCC Chair, Ms. Alisha Falberg (USA), briefed the FAC on the funding mechanism proposed for the transshipment observer scheme, as contained in the draft CMM for a transshipment observer program being forwarded by TCC to the Commission. The relevant paragraph in the draft CMM states that costs of implementing the program shall be financed by the flag member or CNCP of offloading vessels wishing to engage in transshipment operations, with the fee calculated based on the total costs of the program.

35. The FAC noted the information provided but did not make specific recommendations on revisions to the Financial Regulations at this time.

5e. 2024 Internship and Secondment programs

36. Discussions under Agenda Item 5e were carried out in a closed session due to the confidential nature of personnel matters.

37. The Executive Secretary reported on the outcomes of the 2024/2025 Intern and Secondment Program and noted there were no new applications for interns and there was one application for the secondment program for the 2025/2026 fiscal year (NPFC-2024-FAC06-WP02). The Executive Secretary noted the valuable contributions of all participants and indicated that Mr. Jumpei Hinata was applying to extend his secondment for an additional year. The FAC reviewed the application for renewal.

    Recommendation: That the Commission accept the secondment application from Mr. Jumpei Hinata for a 12-month period commencing in June 2025.

5f. Proposed revisions to the Internship and Secondment Program

38. Discussions under Agenda Item 5f were carried out in a closed session due to the confidential nature of personnel matters.

39. The Executive Secretary outlined the proposed changes to the NPFC Internship and Secondment Program based on direction from COM08 and recent experience (NPFC-2025-FAC07-WP03). The proposal aimed to provide greater flexibility in the application process and engagement of interns and secondees.

40. The FAC endorsed the proposed revisions with minor amendments suggested by some Members, including clarifying the confidentiality agreement requirement for secondees and modifying the announcement process for successful interns (Annex D).

    Recommendation: That the Commission adopt the proposed revisions to the NPFC Intern and Secondment Program policies (Annex D) and provide the budgetary resources necessary for the Secretariat to engage qualified candidates for the internship program intersessionally beginning in fiscal year 2025/2026.

Agenda Item 6. Performance Review and items of relevance to FAC

41. The Executive Secretary presented the NPFC Performance Review recommendations that concern the FAC (NPFC-2025-COM09-IP02).

42. The FAC noted the ongoing work to address the recommendations from the Performance Review Panel.

43. On the recommendation related to the requirement for cost assessments to accompany new proposals, some Members expressed reservations, noting concerns that such requirements could potentially deter the development and submission of proposals, as well as their adoption at the Commission.

44. Some Members suggested that the FAC continue working on the Performance Review recommendations in the intersessional period, with involvement of Members to have a more Member-driven discussion on which recommendations to focus on and prioritize. One Member noted the intersessional process to solicit Member input as outlined at COM08 was not followed and suggested that be pursued over the next year.

    Recommendation: That the Commission task the FAC and the Secretariat with continuing intersessional work to address the recommendations from the Performance Review Panel as a standing agenda item, with involvement of Members to effectively focus and prioritize work as outlined in paragraph 94 of the COM08 Final Report.

Agenda Item 7. Secretariat's Work Plan: Budget Estimates for 2025/2026 to 2027/2028

7a. Secretariat Work Plan 2025/2026 including staffing

45. The Executive Secretary presented the Secretariat's Work Plan for the 2025/2026 fiscal year (NPFC-2025-FAC07-WP10).

46. One Member noted that while many of the planned travel items for cooperation with other organizations seemed appropriate, the Secretariat should consider which meetings required in-person attendance versus virtual participation, noting that MoUs with other organizations are not intended to have significant budgetary implications.

47. The FAC endorsed the work plan.

    Recommendation: That the Commission adopt the Secretariat's Work Plan for 2025/2026 (Annex E), in addition to tasking the Secretariat with other necessary work identified by FAC07.

7b. Budget estimates for 2025/2026 and 2026/2027 and indicative budget estimates for 2027/2028 and 2028/2029

48. The Executive Secretary presented the proposed budget for 2025/2026 (NPFC-2025-FAC07-WP01 Rev.1) for the review of the FAC. He highlighted the financial pressures of the devaluation of the yen, inflation, and growing costs of database management and some contracts (e.g., Webex).

49. Some Members expressed concern that the original proposed budget distributed to Members did not reflect the agreed exchange rate (124.36 JPY to 1 USD) for Secretariat staff whose pay in JPY is calculated from USD.

50. The FAC was unable to conclude discussion on the budget on 22 March, and thus adjourned and reconvened on 24 March during the margins of the Commission meeting. As the FAC Chair, Mr. Dan Hull, was unable to attend, Mr. Haruo Tominaga (Japan) served as interim FAC Chair for the remainder of discussion on Agenda Item 7 and for the report adoption process.

51. The Executive Secretary presented a revised version of the proposed budget, which addressed issues involving personnel costs.

52. Some Members requested that more information be provided in future budget proposals and presentations, such as more detailed breakdowns for MCS costs and the inflationary adjustment amounts to personnel costs.

53. The FAC endorsed the proposed budget for 2025/2026 as revised by the Executive Secretary.

Recommendation: That the Commission adopt the proposed budget for 2025/2026 (Annex F, Table 1).

Recommendation: That the Commission adopt the proposed Member contributions for 2025/2026 (Annex F, Table 2).

Agenda Item 8. Other matters

54. The Science Manager, Dr. Aleksandr Zavolokin, presented a proposal for a special project to assist the SWG NPA-SA with stock assessments for splendid alfonsino and north Pacific armorhead (NPFC-2025-FAC07-WP07). The proposal requested 2,142,700 (JPY) from the Special Project Fund for 2025/2026 to hire external experts to conduct an assessment of the north Pacific armorhead stock and improve the assessment of the splendid alfonsino stock.

55. One Member pointed out that it is not clear how budget is allocated among SC related projects. The Member also proposed that FAC, in consultation with SC, review what budget is allocated to which SC projects to consider appropriate budget allocation.

56. The FAC endorsed the proposal and recommended funding from the Special Project Fund.

Recommendation: That the Commission approve the allocation of 2,142,700 (JPY) from the Special Project Fund for hiring external experts to assist with stock assessments for splendid alfonsino and north Pacific armorhead in 2025/2026.

57. The Executive Secretary presented proposed revisions to the FAC Terms of Reference (NPFC-2025-FAC07-WP08), including extending the maximum number of consecutive terms for the Chair from two to three 2-year terms and updating the quorum requirements (to two-thirds).

58. The FAC endorsed the proposed revisions (Annex G).

Recommendation: That the Commission adopt the revised FAC Terms of Reference as proposed in NPFC-2025-FAC07-WP08 (Annex G).

8a. Consideration of Recommendations for FAC Chair/Vice Chair

59. The FAC noted that the terms of the current FAC Chair, Mr. Dan Hull (USA), and Vice Chair, Mr. Luoliang Xu (China), were ending at the conclusion of FAC07. The FAC thanked the Chair and Vice Chair for their excellent work. Following nominations from Members, the FAC recommended to the Commission that Mr. Haruo Tominaga (Japan) serve as the FAC Chair and Mr. Bernard Blazkiewicz (EU) serve as the FAC Vice Chair for a two-year term.

Recommendation: That the Commission appoint Mr. Haruo Tominaga (Japan) to serve as the FAC Chair and Mr. Bernard Blazkiewicz (EU) to serve as the FAC Vice Chair for a two-year term.

Agenda Item 9. Next Meeting

60. ***Recommendation:*** That the Commission consider holding the next FAC meeting in conjunction with the next Commission meeting.

Agenda Item 10. Recommendations to the Commission

61. The FAC recommended the following to the Commission:

(Agenda Item 4)

(a) That the Commission adopt the NPFC Auditor's Report for the 2023/2024 Financial Year.

(b) That the Commission adopt the financial update to 31 January 2025 for the 2024/2025 fiscal year, including the statement of income and expenditures for the year ending 31 March 2024 (2023/2024 fiscal year) and unaudited values for 2024/2025.

(c) That the Commission direct the Secretariat to provide a report on contractual services engaged and outputs received, as requested in paragraph 33 of the FAC06 Final Report.

(d) That the Commission direct the Secretariat to analyze past discussion by the FAC and options for the Working Capital Fund cap consistent with the Financial Regulations, examine past history of how that number of months has been determined, and present options to FAC08 for determining the optimal number of months of operating funds to be available in the Working Capital Fund for the Commission.

(Agenda Item 5)

(e) That the Commission direct the Secretariat and an ad hoc intersessional correspondence group of the FAC to develop clearer options and recommendations on staff pay scales for both General Service and Professional/Director level positions for consideration at FAC08, with a view to making recommendations to the Commission at COM10.

(f) That the Commission maintain the current approach to Manager and Executive Secretary staff pay for fiscal year 2025/2026 while additional work continues intersessionally to consider clear options and recommendations on Professional and General Service salaries.

(g) That the Commission adopt the proposed revisions to Staff Regulation 8.1, with the removal of the phrase "as outlined in NPFC Policy" for clarity and to implement the Secretariat's approach to provide staff with social security benefits beginning in the 2025/2026 fiscal year.

(h) That the Commission direct the Secretariat to develop an applicable NPFC Social Security Policy for consideration of FAC08.

(i) That the Commission accept the secondment application from Mr. Jumpei Hinata for a 12-month period commencing in June 2025.

(j) That the Commission adopt the proposed revisions to the NPFC Intern and Secondment Program policies (Annex D) and provide the budgetary resources necessary for the Secretariat to engage qualified candidates for the internship program intersessionally beginning in fiscal year 2025/2026.

(Agenda Item 6)

(k) That the Commission task the FAC and the Secretariat with continuing intersessional work to address the recommendations from the Performance Review Panel as a standing agenda item, with involvement of Members to effectively focus and prioritize work as outlined in paragraph 94 of the COM08 Final Report.

(Agenda Item 7)

(l) That the Commission adopt the Secretariat's Work Plan for 2025/2026 (Annex E), in addition to tasking the Secretariat with other necessary work identified by FAC07.

(m) That the Commission adopt the proposed budget for 2025/2026 (Annex F Table 1).

(n) That the Commission adopt the proposed Member contributions for 2025/2026 (Annex F Table 2).

(Agenda Item 8)

(o) That the Commission approve the allocation of 2,142,700 (JPY) from the Special Project Fund for hiring external experts to assist with stock assessments for splendid alfonsino and North Pacific armorhead in 2025/2026.

(p) That the Commission adopt the revised FAC Terms of Reference as proposed in NPFC-2025-FAC07-WP08 (Annex G).

(q) That the Commission appoint Mr. Haruo Tominaga (Japan) to serve as the FAC Chair and Mr. Bernard Blazkiewicz (EU) to serve as the FAC Vice Chair for a two-year term.

(Agenda Item 9)

(r) That the Commission consider holding the next FAC meeting in conjunction with the next Commission meeting.

Agenda Item 11. Adoption of the Report

62. The report was adopted by consensus.

Agenda Item 12. Close of the Meeting

63. The FAC meeting closed at 14:25, Osaka time, on 25 March 2025.

Annexes:

Annex A – Agenda

Annex B – List of Documents

Annex C – List of Participants

Annex D – Updated Intern Policy

Annex E – Secretariat Work Plan

Annex F – Budgets and Assessed Contributions

Annex G – Updated FAC Terms of Reference

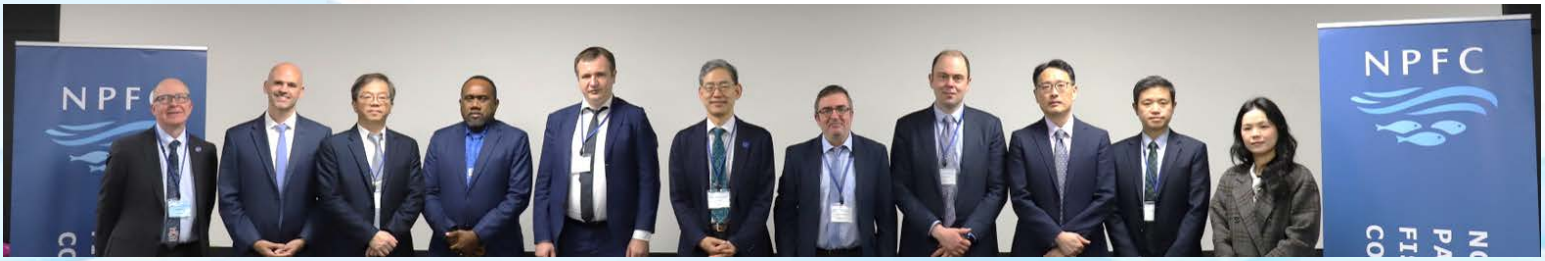
Please refer to the NPFC website for the complete annexes.

9th Commission Meeting

24-27 March 2025

Osaka, Japan (Hybrid)

Meeting Report



Agenda

1. Opening of the Meeting
    a. Welcome Address and recognition of NPFC at 10 years
    b. Appointment of Rapporteur
    c. Adoption of Agenda
    d. Meeting Arrangements

2. Membership of the Commission
    a. Status of the Membership
    b. CNCP applications

3. Report from the Secretariat

4. Performance Review of the Commission – overview of progress

5. Report of the 9th Scientific Committee meeting
    a. Review of SC09 Report and response to COM08 taskings
    b. Adoption of SC09 Report and Recommendations.

6. Report of the 8th Technical and Compliance Committee meeting
    a. Review of TCC08 Report and response to COM08 taskings
    b. Adoption of IUU Vessel List for 2025
    c. Adoption of Final Compliance Monitoring Report
    d. Adoption of TCC08 Report and Recommendations
    e. Consideration of other TCC issues identified during TCC08 or by COM09 meeting

7. Report of the 7th Finance and Administration Committee meeting
    a. Review of FAC Report
    b. Adoption of the proposed budget for 2024/2025 and 2025/2026
    c. Adoption of the FAC07 Report and Recommendations
    d. Consideration of other FAC issues identified during FAC07 or by COM09 meeting

8. Conservation and Management Measures
    a. Review of the amendments to existing CMM’s and any new CMMs

9. Report of the 6th Meeting of the joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS)

10. Cooperation with Other Organizations
    a. PICES
    b. NPAFC
    c. FAO: Deep Sea Fisheries project and FIRMS
    d. WCPFC
    e. SPRFMO
    f. ISC
    g. IMCS Network
    h. UN BBNJ
    i. Other Organizations

11. Other matters
    a. Selection of the Commission Chair and Vice Chair
    b. Selection of Chairs and Co-Chairs of Subsidiary Bodies
    c. Secondment and Intern for 2025
    d. Other business
    e. Press Release

12. Date and Place of next meeting of the Commission and its Committees

13. Adoption of the report

14. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 9th Meeting of the North Pacific Fisheries Commission (NPFC) was held in a hybrid format, with participants attending in-person in Osaka, Japan, or online via WebEx, on 24-27 March 2025, and was attended by Members from Canada, China, the European Union (EU), Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America (USA), and Vanuatu. Panama, the United Nations Food and Agriculture Organization (FAO), the North Pacific Marine Science Organization (PICES), the North Pacific Anadromous Fish Commission (NPAFC), the International Monitoring Control and Surveillance (IMCS) Network, the Australian National Centre for Ocean Resources and Security (ANCORS), the Deep Sea Conservation Coalition (DSCC), the Pew Charitable Trusts (Pew), the Ocean Foundation, the Ocean Governance Institute (OGI), World Wildlife Fund (WWF), and Greenpeace International attended as observers. The meeting was opened by Mr. Shingo Ota (Japan), who served as the Commission Chair.

1a. Welcome Address

2. The Chair welcomed the participants to Osaka and thanked the Secretariat for its dedicated efforts to organize the meeting. The Chair noted that this meeting marks the 10th anniversary of the NPFC. The Chair briefly reviewed the history of the Commission, noting that the NPFC Convention entered into force on 19 July 2015, following the ratification by Japan, Canada, China, and Korea. The Chair highlighted key achievements of the Commission over the past decade. The Chair noted that while the Commission has achieved significant progress, several challenges remain, including the low stock status of Pacific saury, the need to reduce fishing mortality for chub mackerel based on the latest stock assessment, the absence of completed stock assessments for several species, questions about VME protection, and the need for improvements in monitoring, control, and surveillance mechanisms. The Chair also emphasized the importance of making progress on a regional observer program for at-sea transshipment. The Chair's full statement is attached as Annex A.

1b. Appointment of Rapporteur

3. Mr. Jacques Chaumont was appointed as the Rapporteur.

1c. Adoption of Agenda

4. The Commission adopted its agenda (Annex B) with the understanding that Agenda Item 9 would be taken up earlier due to availability of the presenting scientific Co-Chair, and a session of the Finance and Administration Committee (FAC) would take place during the afternoon break to complete its remaining work. The List of Documents and List of Participants are attached (Annexes C, D).

1d. Meeting Arrangements

5. The Executive Secretary, Dr. Robert Day, outlined the meeting arrangements.

Agenda Item 2. Membership of the Commission

2a. Status of the Membership

6. The report on the status of the Convention by the Republic of Korea, the Depositary of the NPFC, was taken as read (NPFC-2025-COM09-IP01). Since the previous Commission meeting, the total number of Members remains at nine.

2b. CNCP applications

7. The TCC Chair, Ms. Alisha Falberg (USA), reported that TCC08 had extensively reviewed Panama's application to renew its CNCP status. Despite the late submission of the application, the TCC had agreed to consider it. Following discussion, the TCC was unable to endorse the application but recommended that the Commission further review Panama’s application for CNCP status for 2025-2027, noting that Panama was requested to provide more information in writing about their monitoring capabilities ahead of the Commission meeting.

8. Panama presented additional information (NPFC-2025-TCC08-WP07 SuppDoc.1) to address the concerns raised by Members during the TCC meeting, reaffirming its commitment to sustainable fishing and conservation of marine resources in the NPFC Convention Area. Panama provided details on its institutional capacity to exercise effective control over its fishing fleet, including its Fisheries Monitoring Center, national observer program, and an electronic monitoring program that will become mandatory from 15 April 2025. Panama confirmed its willingness to participate in the NPFC Regional Observer Program once it enters into force on 1 April 2026, and requested approval of its application for CNCP status for the 2025-2027 period until the 2027 annual meeting.

9. Several Members expressed general support for Panama’s application while raising concerns about: the late submission of their CNCP application; past incidents involving Panamanian-

flagged vessels; and the potential commencement of fishing activities before the implementation of the NPFC Regional Observer Program in 2026.

10. Following further exchange of views, the Commission agreed to grant CNCP status to Panama for the period 2025-2027, with the condition that Panama's participatory rights in NPFC fisheries would begin on 1 April 2026, only when the Regional Observer Program for Transshipment is implemented. The Commission encouraged Panama to make a voluntary financial contribution commensurate with what would be assessed should it become a Contracting Party.

11. The EU stated that any new incident involving a Panama-flagged carrier vessel engaging in unauthorized transshipment within the NPFC area would lead the EU to object to the renewal of Panama's CNCP status at the following Annual Meeting.

12. Panama expressed its gratitude for being granted CNCP status and affirmed its commitment to the principles of cooperation, transparency, and compliance that underpin the work of the Commission, as well as its dedication to responsible fisheries management and strong stance against IUU fishing.

Agenda Item 3. Report from the Secretariat

13. The Executive Secretary presented a summary of the annual report on the Commission's activities for the intersessional period between the 8th Commission Meeting of April 2024 and this current Commission meeting (NPFC-2025-SR).

14. Some Members made suggestions for future improvement of the Secretariat Report, including clarification of the key outputs from meetings (to not imply the list was exhaustive) or omission of the list entirely (as they are well-described in the respective meeting reports), placing focus on implementation of the Secretariat's Work Plan, and inclusion of sections on challenges experienced by the Secretariat and options for addressing them. The Executive Secretary acknowledged the feedback and noted that future Secretariat Reports would reflect such feedback.

Agenda Item 4. Performance Review of the Commission – overview of progress

15. The Commission reviewed the Performance Review matrix update document (NPFC-2025-COM09-IP09), noting that some parts required updating based on the latest work of subsidiary bodies.

16. The USA recognized the substantial progress made by the Commission toward addressing a number of the Performance Review recommendations but highlighted that there had not been sufficient time to discuss the substance of these recommendations in the TCC or FAC. The USA recalled paragraph 94 from the COM08 Final Report, which outlined an intersessional process for updating the matrix and seeking Member input on priorities and timeframes, and requested that this process be implemented as tasked.

17. The EU agreed with the USA, and noted that improving data collection for both target and bycatch species and marine ecosystems should be considered as a key priority, as it was the cornerstone for robust scientific advice, effective monitoring of compliance, and science-based management decisions.

18. Russia highlighted recommendations 4.2.1 (related to data collection and harmonization of data collection formats), as well as 4.5.4 and 4.5.5 (related to climate change), as particularly important areas requiring further attention.

19. The Commission agreed to implement the process outlined in paragraph 94 of the COM08 Final Report for further reviewing the matrix and considering possible improvements to the process. The Chair indicated that he and the Secretariat would initiate this process following the annual meeting, in consultation with Members.

Agenda Item 5. Report of the 9th Scientific Committee meeting

5a. Review of the SC09 Report and response to COM08 taskings

20. The Chair of the SC, Dr. Janelle Curtis (Canada), summarized the outcomes of the 9th SC meeting and the meetings of its subsidiary bodies (NPFC-2025-SC09-Final Report & NPFC-2025-COM09-IP10) for discussion by the Commission.

21. Several Members expressed concern about the status of chub mackerel, with one Member noting the sharp decline in CPUE and catch levels and concerning changes in biological parameters.

22. The Chair of TWG-CMSA, Dr. Kazuhiro Oshima (Japan), explained that due to the drastically changing productivity of Chub mackerel in recent years, they did provide MSY-related and SPR-related reference points, however, those vary over time and are uncertain, therefore they are potentially misleading with respect to stock status. He noted that future projections under current fishing mortality showed the stock would decline in future years, which formed the basis for the scientific advice.

23. Members discussed structural improvements to the SC's work, with suggestions for adopting management cycles for different stocks to optimize SC's capacity, and establishing a peer review system for stock assessment to address methodological challenges like scaling issues.

24. On the topic of domestic stock assessments, Members acknowledged their value while emphasizing the need for transparent, collaborative scientific processes. Several suggestions were made to improve stock assessment approaches, including developing a formal process for using domestic assessments as interim advice. For NPFC stock assessments, Members suggested considering less frequent benchmark assessments with regular updates between them, and standardizing how stock status is presented across species to enhance consistencies as much as possible.

25. Members expressed broad support for the VME protection measures proposed by SC09, particularly the closure of additional areas on Yuryaku Seamount and the incorporation of the translation table for VME indicator corals.

26. The SC Chair confirmed that the discussions at the SC on data needs and gaps that could be possibly addressed through a regional observer program for pelagic fisheries have not been finalized. The SC will continue to discuss data needs and data gaps that could be filled by a regional observer program and inform the TCC about progress in these discussions.

27. The biological characteristics of pelagic species were discussed, with emphasis on how these stocks reproduce in national waters before migrating to offshore feeding areas. Several Members noted that both reproduction and feeding areas are particularly vulnerable zones for the survival of these resources, which have implications for their conservation and management.

28. The USA gave a statement on high seas bottom fisheries. The USA's statement is attached as Annex F.

29. The Commission discussed the prioritization of species for stock assessment. Some Members suggested that Japanese sardine should be prioritized based on catch levels and effort, while others suggested that neon flying squid should be given priority as it has widespread fishing activities across the Convention Area and is currently not assessed by any Member. The Commission agreed to task the SC to continue to work on stock assessments for both neon flying squid and Japanese sardine.

30. The Commission also requested the SC to consider the frequency of stock assessments, including the possibility of conducting benchmark assessments less frequently with updates in between, and to explore the potential benefits of a peer review system.

31. In response to SC's request for guidance on providing advice for priority species where collaborative work towards NPFC stock assessment is not being conducted, the Commission agreed that SC should continue to observe domestic stock assessments, report the results to the Commission without endorsing them, while working towards conducting NPFC stock assessments for priority species.

32. On the topic of bottom fisheries, Greenpeace International, DSCC, and Pew expressed concern that the proposed closures on Yuryaku Seamount did not reflect extensive peer-reviewed science identifying VMEs across many areas of the seamount chain. They urged broader protections in line with the UNGA resolutions and the NPFC Convention, and drew attention to their submitted observer paper (NPFC-2025-COM09-OP6).

5b. Adoption of the SC09 Report and Recommendations

33. The Commission discussed additional recommendations to the Scientific Committee based on the proposal submitted by the EU (NPFC-2025-COM09-WP11).

34. The SC Chair provided a written response to the EU's proposal (NPFC-2025-COM09-WP12), and several Members offered further revisions to the EU's recommendations. The Commission agreed to forward the recommendations (Annex G) as revised to the SC to consider incorporation into its work plan.

35. The Commission noted the importance of reporting bycatch data for all priority species. The Science Manager presented summaries of available bycatch information for Japanese sardine and Pacific saury, as well as the ratio of chub mackerel and blue mackerel catches reported by members. Several Members suggested that reporting requirements for bycatch should be clarified to ensure all catches are properly accounted for in stock assessments. The EU submitted a proposal to amend open CMMs (CMM 2024-07, CMM 2024-08 and CMM 2024-11) to strengthen and clarify bycatch reporting requirements (NPFC-2025-COM09-WP10). The Commission agreed to the proposed changes under agenda item 8.

36. The Commission adopted the reports and the recommendations of the SC with the understanding that the proposed amendments to the two CMMs would be discussed under Agenda Item 8.

Agenda Item 6. Report of the 8th Technical and Compliance Committee meeting

6a. Review of TCC08 Report and response to COM08 taskings

37. The Chair of the TCC, Ms. Alisha Falberg (USA), summarized the outcomes of the 8th TCC meeting (NPFC-2025-TCC08-Final Report, Annex H) for discussion by the Commission.

38. The Commission discussed the Fisheries Overview paper presented during TCC, with some Members expressing concern about the process of making continual changes to a report document during the meeting without a clear understanding of the basis of such changes by Members and the need to maintain objectivity in reports prepared by the Secretariat.

39. The Compliance Manager explained the challenges in reconciling different counting methods used by the Secretariat and Members. The Compliance Manager noted the lack of clear guidelines on developing the Fisheries Overview.

40. Several Members expressed views on how to handle the Fisheries Overview and related matters, including suggestions to focus on other metrics that could be more effective for monitoring compliance, to base discussions on Members' self-reported vessel numbers rather than vessel registry data, and to change the document type from Information Paper to Working Paper in the future to align with the NPFC Document Policy.

41. Several Members noted the linkage to the discussion of historical existing level and the importance of progressing work on defining historical existing level with unified criteria.

42. The EU noted that these discussions were mainly focused on reconciling the historical number of authorized vessels which did not seem to be an effective measure for restricting fishing effort, or monitoring compliance. Noting the repeated and inconclusive discussions at TCC, the EU suggested that the Commission consider in the future other more appropriate metrics, such as the number of active f/v or number of fishing days, for the purpose of effort control in NPFC fisheries.

43. The Commission agreed to task the SWG Ops to continue its work on historical existing level and to review the information provided by the Secretariat and Members, as well as to work towards establishing specific criteria for calculating historical existing level based on the recommendation by TCC08.

6b. Adoption of IUU Vessel List for 2025

44. The Commission reviewed the Provisional IUU Vessel List provided to COM09 by TCC08, which contained one vessel proposed by Canada.

45. China informed the Commission that it had completed its sanction procedure against the vessel on 20 March, with the vessel owner making full payment of the sanction.

46. Following discussions, Canada and China provided additional information about the vessel, including the violation report, a summary of the inspection report from China's provincial enforcement agency, and supporting evidence regarding packaging practices.

47. Several Members expressed concerns about the possible recurring nature of these incidents, their potential negative impacts on Pacific saury stock status, and the need to prevent similar issues in the future. Concerns were also raised about inconsistencies between China's domestic laws and NPFC regulations, and about the process for providing official information on sanctions for consideration of Members.

48. China acknowledged the significant violations of NPFC CMMs by one Chinese-flagged vessel related to catch of Pacific saury during a closed season/without a quota, misreporting of catch and misreporting in a transshipment declaration, and apparent effort to conceal and misrepresent catch in logbooks and transshipment documentation. China noted the significant sanctions imposed and its view that this constituted adequate flag state action with sanctions imposed of appropriate severity, and updated the Commission to confirm the vessel owner had paid the fines.

49. The Commission requested China to further investigate new information and consider increasing the penalty imposed on the vessel company due to the overlapping potential violations and aggravating information. China committed to update its national legislation or regulations to ensure conformity with NPFC CMMs to ensure all vessels accurately record and report Pacific saury catch and other bycatch in catch records and transshipment declarations, regardless of the target species, to ensure compliance with catch limits adopted by the Commission. China also committed to follow up with its vessels to ensure they do not fish for Pacific saury without quota. China indicated that if similar violations recur on its vessels, it will withdraw the vessel's authorization and high seas permit for a year while investigations occur.

50. China acknowledged that the issues uncovered during the high seas boarding and inspection should have been reported by the observer. Until the new transshipment ROP is implemented, the Commission requested China to take steps to improve implementation of its national observer program to identify violations. China also agreed to strengthen their landing inspections procedures, in cooperation with domestic customs officials. China committed to carefully examine boarding reports to confirm compliance with CMMs, regardless of whether

a violation was identified by the authorized inspectors, as well as to conduct at-sea and strengthened port inspections on its vessels. To support effective HSBI, China will continue to conduct HSBI in 2025 and to provide transparent inspection details, to include types of violations by vessel type to the Commission. China Fisheries Authority committed to update their authorized inspectors with the outcomes of this meeting, any amendments to CMMs, and confirm implementation of bycatch provisions that will impact fishing vessels.

51. The Commission agreed to not list the vessel in the IUU Vessel List and adopted the NPFC IUU Vessel List for 2025 (Annex I).

6c. Adoption of Final Compliance Monitoring Report

52. The TCC Chair explained that this was the first implementation year of the CMS CMM 2024-13 adopted at COM08. TCC assessed compliance on seven areas of potential non-compliance identified by the Secretariat and six areas of potential non-compliance identified by members. All other areas were assumed compliant. The TCC developed a Provisional Compliance Report by consensus, which assessed each Member's compliance with all obligations in Annex 2 of CMM 2024-13, and attached an executive summary that summarized outstanding issues, general feedback on the process, and identified data gaps.

53. The Commission adopted the Compliance Monitoring Report as forwarded by TCC08 (Annex J).

6d. Adoption of the TCC08 Report and Recommendations

54. The Commission adopted the report and the recommendations of the TCC with the understanding that the draft CMMs discussed at the TCC08 would be discussed under Agenda Item 8. (Annex H)

6e. Consideration of other TCC issues identified during TCC08 or by COM09 meeting

55. The TCC Chair noted that the TCC Work Plan had not been fully updated and reviewed at TCC08, and sought Commission guidance on the Work Plan. At the request of a Member, the Secretariat and TCC Chair updated the document and posted a revised version for consideration.

56. Some Members suggested minor amendments, and the Commission agreed to the revised TCC Work Plan (Annex K).

57. The Ocean Foundation, DSCC, WWF Japan, and Pew congratulated the Commission for adopting the NPFC Rules of Transparency for TCC, which they described as world-leading in including civil society organizations in discussions about implementation of agreed decisions.

58. The Commission reviewed the list of obligations to be assessed as part of the Compliance Monitoring Scheme (CMS) in Annex 2 of CMM 2024-13. The Commission agreed to add paragraph 16 of the Pacific Saury CMM, paragraph 31 of the HSBI CMM, paragraphs 5, 7, 9, and 11 of the Anadromous Species CMM, paragraph 3 of the Chub Mackerel CMM, and provisions related to bycatch reporting across CMMs, while noting that paragraph 2 of the Vessel Registry CMM did not have full agreement from Members (Annex L).

59. The TCC Chair noted that some conforming changes would be required to update paragraph numbers and language in existing obligations to align with amended CMMs.

60. Regarding the new VMS entry and exit reporting requirement (Annex M), the Commission agreed that this obligation would take effect from 1 April 2026 and would be added to the list of obligations to be assessed after that date (Annex L).

Agenda Item 7. Report of the 7th Finance and Administration Committee meeting

7a. Review of FAC Report

61. The Chair of the Finance and Administration Committee (FAC), Mr. Dan Hull (USA), was unable to attend the Commission meeting, so in his absence, Mr. Haruo Tominaga (Japan), who had served as the Interim FAC Chair for the final proceedings of the FAC meeting, summarized the outcomes of the 7th FAC meeting (NPFC-2025-FAC07-Final Report, Annex N) for discussion by the Commission.

62. The European Union announced it would provide a voluntary contribution of 50,000 (EUR) to support specific work of the TCC and the SC. The Commission thanked the EU for its generous contribution.

7b. Adoption of the proposed budget for 2024/2025 and 2025/2026

63. One Member emphasized its goal of having a zero-growth policy for the budget, acknowledging the need for future discussion and review of the budget in the following year.

64. The Commission adopted the proposed budgets for 2025/2026 and 2026/2027 as submitted by the FAC07 (NPFC-2025-COM09-WP13, Annex O, Table 1) along with the associated assessed contributions (Annex O, Table 2), noting that the assessed contribution amounts for 2026/2027 would be updated based on GDP and catch history at that time. The Commission confirmed that the budget for 2026/2027 could be subject to review at the 2026 annual meeting.

7c. Adoption of the FAC07 Report and Recommendations

65. The Commission adopted the report and the recommendations of the FAC07 (Annex N).

7d. Consideration of other FAC issues identified during FAC07 or by COM09 meeting

66. The Commission discussed the financial implications of the proposed transshipment observer program. Several Members sought clarification on how the program would be funded and whether changes to the Financial Regulations would be necessary. The Interim FAC Chair noted that in other RFMOs, while costs are primarily paid by Members involved in transshipment, there are sometimes administrative costs incurred by the Secretariat.

67. China stated that the cost of the observer program should be borne by a special account funded by members participating in transshipment, noting that administrative costs for the Secretariat would be a relatively small amount that could be covered. China also indicated willingness to use its voluntary contributions to help cover the initial set-up costs of the program.

68. The Commission agreed that:
    (a) The cost of the observer program shall be borne by those involved in the at-sea transshipment observer program, on a prorated basis;
    (b) Initial costs (e.g., development of an observer report database) would be covered by the China Voluntary Contribution Fund;
    (c) The Secretariat's work in detailed analysis of the program (e.g., aligning reports from the Transshipment Observer Program service provider with VMS and transshipment reporting) would be considered part of its compliance monitoring work;
    (d) The program would be operated using a special fund set up under the auspices of paragraph 27 of the NPFC Financial Regulations and kept separate from the General and Working Capital Funds.
    (e) The cost sharing method among Members involved in at-sea transshipment will be discussed intersessionally, and for this purpose, the Secretariat will produce a draft cost sharing scheme, taking into account the practice of other RFMOs, and submit it to Members involved in at-sea transshipment. China will lead intersessional discussion.

69. The Commission also agreed on the following approach to implement the Transshipment Observer Program:
    (a) An ad-hoc SWG TOP (TSWG) will be established with leadership by China, with the support of the Secretariat, and participation open to all Members and CNCP. Participation from those active in transshipment is encouraged.
    (b) The TSWG tasks will include:
        (i) With support of the Secretariat, draft set of requirements for a contract (a statement of work) based on the Transshipment Observer Program CMM;

(ii) Based on the drafted contract requirements, report to the Commission on the contracting process;
(iii) With support of the Secretariat, develop pro-rated cost sharing formula;
(iv) With support of the Secretariat, develop a financial management approach to create a separate restricted account established under the NPFC Financial Regulation 27; and
(v) Any other issues that the TSWG deem appropriate.

(c) The Commission will ensure that Financial Regulation 29 is appropriately considered.

Agenda Item 8. Conservation and Management Measures

8a. Review of the amendments to existing CMMs and any new CMMs

Review of CMM 2024-05 For Bottom Fisheries And Protection Of Vulnerable Marine Ecosystems In The Northwestern Pacific Ocean

70. The Commission reviewed the SC09 recommendation to revise CMM 2024-05 for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northwestern Pacific Ocean (NPFC-2025-COM09-WP01). Canada sought clarification on paragraph 4(b) regarding the prohibition of bottom fisheries expansion into the western part of the Convention Area where no such fishing is currently occurring. The SC Chair confirmed that any bottom contact fishing outside the existing fishing footprint would be subject to an assessment and the exploratory fishing protocol. The Commission adopted the proposed amendments to CMM 2024-05 (Annex P).

71. DSCC and Pew drew attention to a letter signed by 52 deep-sea scientists concerning the Northwest Hawaiian Ridge and Emperor Seamount Chain (NPFC-2025-COM09-OP6). The letter noted that VMEs occur or are likely to occur across most of the area, that significant adverse impacts have occurred and may continue, and that damaged coral ecosystems can recover if protected from bottom fishing. The scientists recommended a precautionary temporary closure of all fishing using gear that may contact the seafloor, to demonstrate NPFC's commitment to global biodiversity conservation objectives and good faith engagement with the BBNJ process.

72. Canada and Korea expressed support for the scientists' input and acknowledged the importance of advancing marine protections based on peer-reviewed science. They supported updating impact assessments for bottom fisheries and the area-based closure on Yuryaku Seamount as a first step. These Members noted the significance of the upcoming UN bottom fisheries review in 2026 and expressed a desire to continue working on marine ecosystem protection in coming years.

Review of CMM 2024-06 For Bottom Fisheries And Protection Of Vulnerable Marine Ecosystems In The Northeastern Pacific Ocean

73. The Commission reviewed the SC09 recommendation to revise CMM 2024-06 for Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northeastern Pacific Ocean (NPFC-2025-COM09-WP02). The Commission adopted the proposed amendments to CMM 2024-06 (Annex Q).

Review of CMM 2024-11 For Japanese Sardine, Neon Flying Squid, And Japanese Flying Squid

74. Japan presented proposed amendments to CMM 2024-11 for Japanese Sardine, Neon Flying Squid, and Japanese Flying Squid (NPFC-2025-COM09-WP03). Japan explained that its proposal aims to split the current CMM into two separate measures and to establish a catch limit for Japanese sardine in the NPFC Convention Area. Japan noted that the stock shows concerning signs despite some recovery since 2021, with fishing mortality above F_{MSY} level and recent recruitment indices indicating a sharp decline. Japan highlighted that it has reduced its domestic TAC for 2025 by approximately 30% and emphasized the need for compatible measures in the Convention Area under the UN Fish Stocks Agreement.

75. Several Members raised concerns and questions including about the rationale for the 30% reduction and whether the catch limit would apply to vessels targeting Japanese sardine or include bycatch. Some Members raised concern about discussions on this matter not going through the SC first.

76. Extensive discussions were carried out informally throughout the meeting on this proposal. The Commission was unable to reach a consensus, so Japan decided to defer consideration of the proposal and expressed its intent to submit a proposal to amend this CMM to COM10.

77. The Commission agreed to amend the CMM to clarify the bycatch reporting requirements, (as outlined in NPFC-2025-COM09-WP10) and the Secretariat was tasked with making this amendment to the CMM for clarity purposes (Annex R).

Review of CMM 2024-07 For Chub Mackerel

78. Japan presented proposed amendments to CMM 2024-07 for Chub Mackerel (NPFC-2025-COM09-WP04). Japan explained that its proposal seeks to set a revised catch limit in the NPFC Convention Area based on the first stock assessment conducted by the Technical Working Group on Chub Mackerel Stock Assessment (TWG-CMSA) and endorsed by the SC. Japan highlighted that the assessment indicates that spawning stock biomass (SSB) has been declining sharply since 2018, along with drastic decreases in maturity at age and weight at age. Japan noted that the stock assessment advised reducing current fishing mortality, as projections showed it would

lead to further decline in SSB. Japan's proposal suggests setting the TAC in the Convention Area well below 50,000 metric tons to ensure the annual catch level in the entire area stays below 150,000 metric tons. Japan mentioned that as a coastal state, it is planning to reduce its domestic TAC by approximately 70%.

79. WWF expressed support for Japan's proposals for Japanese sardine and chub mackerel, noting the importance of strengthening management in accordance with the best available science, and calling on NPFC to reduce catch for chub mackerel and to set catch limits for Japanese sardine while the stock is still relatively abundant, suggesting this would be better for the future of both the species and the fishing industry and communities.

80. The Ocean Foundation and Pew welcomed Japan's chub mackerel proposal, noting the concerning state of the stock. They encouraged the inclusion of a paragraph calling for the development of a management strategy evaluation (MSE) and adoption of a management procedure by 2028.

81. Japan provided an additional information paper (NPFC-2025-COM09-IP11) with projection scenarios for chub mackerel for consideration by Members. Extensive discussions were carried out throughout the meeting in a small working group formed to discuss this proposal.

82. Japan explained the revisions made during the small working group, and following further input from Members (including clarifying the bycatch reporting requirements, as outlined in NPFC-2025-COM09-WP10). The Commission adopted the proposed amendments (Annex S).

83. The Commission noted that, for 2025, "fishing activities for chub mackerel" in the amended CMM has the same meaning as "fishing activities targeting chub mackerel."

84. Several Members expressed concern about incidental catch not being counted towards catch limits, and thus creating a potential conservation risk, as well an unclear definition of "targeting" or "directed fishing" within NPFC. The Commission agreed to continue discussion on this issue for all NPFC species at future meetings.

85. The Commission agreed to task the TWGCMSA as outlined in Annex T.

Review of CMM 2024-08 For Pacific Saury

86. Japan presented proposed amendments to CMM 2024-08 for Pacific Saury (NPFC-2025-COM09-WP05). Japan explained that the proposal implements the interim harvest control rule (HCR) adopted last year, which calls for a 10% reduction in TAC. The proposed amendments include: setting the annual catch limit at 202,500 metric tons (paragraph 7); maintaining the

current proportion for the Convention Area at 60% (paragraph 8); requiring Members to reduce their catch by a yet-to-be-determined percentage from their 2018 reported catch (paragraph 9); and requiring the Secretariat to inform all members when a member reaches its catch limit or decides to close its fishery (paragraph 12).

87. Members generally supported the 10% TAC reduction based on the interim HCR, but required further discussion on other issues concerning Japan's proposal.

88. Chinese Taipei presented proposed amendments to CMM 2024-08 for Pacific Saury (NPFC-2025-COM09-WP06). Chinese Taipei proposed reducing the TAC in the entire area to 202,500 metric tons and the TAC in the Convention Area to 121,500 metric tons, in accordance with the SC recommendation. Chinese Taipei further proposed reducing the catch limit of each member by 24%, which accounts for the 10% reduction that was not implemented last year, plus the 10% reduction recommended for this year, plus 4% to address the historical discrepancy between the sum of individual Members' catch limits and the overall TAC.

89. Vanuatu submitted a proposal to amend CMM 2024-08 for Pacific Saury (NPFC-2025-COM09-WP07) after the deadline for document submission. The Commission discussed the procedural matter of considering late submissions and agreed that while Vanuatu would not present its proposal formally, the substantive points could be raised during the course of discussions on Pacific Saury. Vanuatu noted that its position regarding special consideration for Small Island Developing States has not been taken into account in previous CMMs.

90. Interested Members discussed bilaterally and in a small working group established to discuss the Pacific saury CMM proposals. Japan explained the revisions made during the small working group, and following further input from Members, (including clarifying the bycatch reporting requirements, as outlined in NPFC-2025-COM09-WP10), the Commission adopted the proposed amendments (Annex U).

Review of CMM 2024-12 On The Vessel Monitoring System (VMS)

91. The Commission reviewed the TCC08-endorsed amendments to CMM 2024-12 on the Vessel Monitoring System (VMS) (NPFC-2025-TCC08-WP12 Rev.4). The Commission adopted the proposed amendments.

New CMM 2025-17 On The Transshipment Observer Program

92. The Commission considered a draft CMM on the Transshipment Observer Program (NPFC-2025-TCC08-WP13 Rev.2). Several bracketed provisions remained unresolved from TCC08. The Commission convened an informal working group led by the TCC Chair to finalize the text.

The TCC Chair reported that all substantive issues had been resolved. The Commission adopted the new CMM on the Transshipment Observer Program (Annex V).

93. Several Members, while not blocking consensus on adoption of the CMM, expressed their view that the definition of "Observer Service Provider" should not necessarily include the term "non-governmental" to exclude potential governmental candidates.

Review of CMM 2024-03 On Transshipments

94. The Commission reviewed the amendments to CMM 2024-03 on Transshipments (NPFC-2025-TCC08-WP19 Rev.1). Following deliberations in the informal working group led by the TCC Chair and adoption of the Transshipment Observer Program CMM, the Commission adopted the amendments to CMM 2024-03 on Transshipments (Annex W)

New CMM On Port State Measures

95. The Commission was informed that a joint proposal by Canada, EU, and Korea on Port State Measures was still under discussion. The proponents indicated they had received comments from most Members that were integrated into the draft, but more time was needed for consultations. One Member was not yet ready to join consensus on this proposal, so the Commission agreed to continue working intersessionally on this proposal through the SWG PD, with the aim of advancing it for consideration at the next Commission meeting.

New CMM On Standardization For Data Collection

96. Regarding the EU proposal on standardization for data collection (NPFC-2025-TCC08-WP15), the Commission noted TCC08's recommendation to task the TCC and SC to continue working intersessionally on this proposal. The EU suggested that the new Small Working Group on Data established by the SC could take up this task. The Commission agreed to this approach.

Agenda Item 9. Report of the 6th Meeting of the joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS)

97. The Science Co-Chair of the joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS), Dr. Toshihide Kitakado (Japan), summarized the outcomes of the 6th SWG MSE PS meeting (NPFC-2025-MSE PS06 Final Report, Annex X).

98. Several Members expressed concern about the current stock levels and emphasized the importance of implementing the interim HCR as scheduled. Some Members noted the importance of considering climate change impacts in future work.

99. Some Members raised questions about discrepancies between the latest two assessments showing lower biomass despite conservation measures being in place, and about the apparent contradiction between scientific assessment showing poor resources and industry observations of good resources in the 2024 season. Dr. Kitakado explained that the assessment has a high level of uncertainty and that the 2024 fishery-dependent data had not yet been incorporated.

100. The Commission noted the TAC calculated for 2025, agreed that invited experts would continue to be invited to the next SWG MSE PS, endorsed holding the 7th SWG MSE PS between SC10 and COM10 in a virtual or hybrid format, and agreed on the importance of participation by scientists, managers, and stakeholders in future meetings.

Agenda Item 10. Cooperation with Other Organizations

10a. PICES

101. Dr. Sonia Batten (PICES) presented on the renewal of the NPFC-PICES collaborative framework for 2025-2029, which maintains priority areas of stock assessment support, vulnerable marine ecosystems, and ecosystem approaches to fisheries, while incorporating climate change impacts across all areas. Dr. Kathryn Berry (PICES) outlined the Basin-scale Events and Coastal Impacts (BECI) project, which aims to create a North Pacific Ocean Knowledge Network connecting diverse sources of information across jurisdictions, with a potential use case for integrating Pacific saury data across Member countries. (NPFC-2025-COM09-OP01)

102. Canada expressed strong support for the BECI project, noting that Canada had provided approximately 1 million (CAD) to support it, and encouraged other Members to consider further support for this important work.

10b. NPAFC

103. Mr. Kondo, Executive Director of NPAFC, thanked the NPFC for its adoption of CMM 2024-16 on anadromous fish at COM08, noting its alignment with the NPAFC Convention. He congratulated NPFC on its 10th anniversary and reported on cooperation between the organizations under their 2019 Memorandum of Cooperation and five-year work plan endorsed in 2023. He noted that several items in the work plan have been completed or are ongoing, including the International Year of the Salmon expedition completed with NPFC's contributions.

104. Mr. Kondo reported that the NPAFC Secretariat had prepared draft terms of reference for a secure SharePoint platform for information exchange. He explained that while NPAFC had previously proposed a joint workshop on transshipment management and Pacific salmon

bycatch, after internal discussions, NPAFC would like to suspend joint workshop discussions and instead focus on organizing its own workshop in 2026 on interactions with anadromous species, with NPFC input welcomed. (NPFC-2025-COM09-OP11)

105. Japan expressed appreciation for the continued cooperation between the organizations, noting the value of their shared Convention Area. Japan welcomed the NPAFC workshop and indicated it would contribute to those discussions as a member of both NPFC and NPAFC.

10c. FAO: Deep Sea Fisheries project and FIRMS

106. Ms. Eszter Hidas (FAO) presented on the Common Oceans Deep Sea Fisheries Project, highlighting key achievements including an e-learning course on deep-sea fisheries management, a review of FAO Deep Sea Fisheries Guidelines implementation, workshops on precautionary approaches, and support for NPFC's work on climate change and deep water shark species. She noted upcoming activities on deep water sharks, data-limited stock assessment methodologies, and cross-sectoral interactions with deep sea fisheries, as well as FAO's involvement in two BBNJ-related projects. (NPFC-2025-COM09-OP07 & NPFC-2025-COM09-OP08)

107. The EU and Korea expressed support for continuing cooperation between NPFC and FAO, in particular in terms of identifying additional resources to support the work of the Commission and its subsidiary bodies.

10d. WCPFC

108. The Chair noted that NPFC and the Western and Central Pacific Fisheries Commission (WCPFC) signed an MoU in the past year.

10e. SPRFMO

109. The Chair noted that NPFC and the South Pacific Regional Fisheries Management Organisation (SPRFMO) signed an MoU in 2023.

10f. ISC

110. The Chair noted that NPFC and the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC) signed an MoU in the past year.

10g. IMCS Network

111. The Commission noted that NPFC has been a Member of IMCS since 2023, and this has provided the Secretariat with various resources and opportunities to exchange information and receive guidance on compliance approaches and technology.

10h. UN BBNJ

112. Korea announced that, on March 19, 2025 (New York time), it deposited the instrument of ratification of the BBNJ Agreement with the Secretary-General of the United Nations, becoming the 21st country to ratify the Agreement and the first in the East Asian region. Korea urged other countries to join the growing list of ratifying nations to help ensure the timely implementation of the Agreement. Additionally, Korea took the opportunity to announce the hosting of the 10th Our Ocean Conference, which will be held from April 28 to 30, 2025, in Busan. The conference, themed "Our Ocean, Our Action," will feature a wide range of discussions and events aimed at fostering global cooperation to promote sustainable oceans and fisheries. Korea looks forward to welcoming delegates to the Our Ocean Conference.

113. Russia stated that the BBNJ issue is complicated and noted the need to better understand the benefits of the agreement. Russia emphasized that communication with BBNJ in the future should be based on priorities to use NPFC's own regulations as an RFMO.

114. The EU reported that it had completed its ratification process and expected to deposit, together with EU member states, their ratification instruments before the UN Ocean Conference in June 2025. The EU called on other NPFC Members to ratify the agreement so it could enter into force. The EU also noted that it had recently adopted an EU Global Ocean Programme for 40 million (EUR) over six years to help developing states implement the agreement.

115. Pew welcomed the progress in advancing the conservation and sustainable use of marine biodiversity and encouraged RFMOs to begin considering how they might prepare to interact with the BBNJ agreement as it enters into force.

10i. Other Organizations

116. Pew drew Members' attention to their observer paper (NPFC-2025-COM09-OP04) on the role RFMOs have regarding the World Trade Organization's agreement on fishery subsidies.

117. The Commission endorsed the TCC08 recommendation to consider signing an MoU with IATTC and to task the Secretariat with drafting such an MoU and circulating the draft among Members for input prior to its submission to the IATTC annual meeting in August 2025.

Agenda Item 11. Other Matters

11a. Selection of the Commission Chair and Vice Chair

118. Mr. Shingo Ota (Japan) and Ms. Jung-re Riley Kim (Korea) were nominated to serve another term as Commission Chair and Commission Vice Chair, respectively.

119. The Commission selected Mr. Shingo Ota (Japan) to serve as Chair and Ms. Jung-re Riley Kim (Korea) to serve as Vice Chair for second two-year term.

11b. Selection of Chairs and Co-Chairs of Subsidiary Bodies

120. The Commission endorsed the recommendation of the TCC to select Ms. Alisha Falberg (USA) to serve as TCC Chair and Ms. Amber Lindstedt (Canada) to serve as TCC Vice Chair for a second two-year term.

121. The Commission endorsed the recommendation of the FAC to select Mr. Haruo Tominaga (Japan) to serve as FAC Chair and Mr. Bernard Blazkiewicz (EU) to serve as FAC Vice Chair for a two-year term.

122. The list of Chair and Vice Chair positions of bodies created under the auspices of the subsidiary bodies was also reviewed and the USA withdrew its Vice-Chair for the SSC-BF-ME, noting that the SSC-BF-ME had two Vice-Chairs at time of presentation (List of Chairs provided as Annex Y).

11c. Secondment and Intern for 2025

123. The Commission endorsed the FAC's recommendation and agreed to accept the secondment application for renewal from Mr. Jumpei Hinata (Japan) for a 12-month period commencing in June 2025.

124. The Commission noted that there were no candidates for internship positions this year.

11d. Other business

125. No other business was discussed.

11e. Press Release

126. The Commission endorsed the Press Release for publication on the NPFC website (Annex Z).

Agenda Item 12. Date and Place of next meeting of the Commission and its Committees

127. The Executive Secretary presented a document with information on hosting by the Secretariat if no Member accepts hosting COM10, TCC09 and FAC08, including timing and hosting costs if borne by the Secretariat (NPFC-2025-COM09-IP02). The proposed timing takes into account the Lunar New Year and fisheries operations.

128. The Commission confirmed that Secretariat would host the COM10, TCC09, and FAC08 meetings.

129. The Commission agreed to tentatively hold the next meetings of the TCC, the FAC, and the Commission in Japan, in a location besides Tokyo, on the following dates:
   (a) TCC09: 8-11April 2026
   (b) FAC08: 13 April 2026
   (c) COM10: 14-17 April 2026 (with the Heads of Delegation meeting to be held on the morning of 14 April)

130. The Commission agreed to tentatively hold the 2027 meetings of the TCC, the FAC, and the Commission on the following dates:
   (a) TCC10: 6-9 April 2027
   (b) FAC09: 10 April 2027
   (c) COM11: 12-15 April 2027 (with the Heads of Delegation meeting to be held on the morning of 12 April 2027)

Agenda Item 13. Adoption of the report

131. The report was adopted by consensus.

Agenda Item 14. Close of the Meeting

132. The Chair thanked the Secretariat for organizing and running the meeting and the participants for their cooperation and engagement. The Chair congratulated the Commission on a successful and productive meeting, and requested Members to continue their hard work in the intersessional period to ensure the success of COM10.

133. The Commission meeting closed at 18:20 on 27 March 2025, Osaka time.

Annexes:

Annex A – Statement by the Chair
Annex B – Agenda
Annex C – List of Documents
Annex D – List of Participants
Annex E – NPFC SC09 Final Report
Annex F – Statement by the United States
Annex G – Scientific Committee Tasking
Annex H – NPFC TCC08 Final Report
Annex I – NPFC 2025 IUU Vessel List
Annex J – 2025 Compliance Monitoring Scheme
Annex K – TCC 2025 Workplan
Annex L – CMM 2025-13 Compliance Monitoring Scheme
Annex M – CMM 2025-12 Vessel Monitoring System (VMS)
Annex N – NPFC FAC07 Final Report
Annex O – Budgets for 2025/2026 and 2026/2027 with assessed contributions
Annex P – CMM 2025-05 Bottom Fisheries and VME in NWPO
Annex Q – CMM 2025-06 Bottom Fisheries and VME in NEPO
Annex R – CMM 2025-11 JS, NFS, and JFS
Annex S – CMM 2025-07 Chub Mackerel
Annex T – Tasking for TWG CMSA and Scientific Committee
Annex U – CMM 2025-03 Transshipments
Annex V – CMM 2025-17 Transshipment Observer Program
Annex W – CMM 2025-08 Pacific Saury
Annex X – NPFC MSE PS06 Final Report
Annex Y – List of Chairs for 2025
Annex Z – Press Release

Please refer to the NPFC website for the complete annexes.

This is The Great Wave by Katsushika Hokusai, a ukiyo-e print and one of the 46 works in his famous series Thirty-six Views of Mount Fuji.

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