North Pacific Fisheries Commission

Yearbook 2018

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FOREWORD

"Third time is the charm" is an English idiom that means "the third time you try to do something, it will work."

It is a very positive message that reflects one's perseverance and eventual triumph over adversities and it can also be interpreted as one's redemption despite committing mistakes.

The Commission has achieved a lot over the past three years, and this is not because of any lucky charm. I firmly believe that our success is brought about by the cumulative hard work and the valuable contributions from all Members.

This book summarizes our efforts for the past year reflecting our strong commitment in ensuring the long-term conservation and sustainable use of our fisheries resources within the Convention Area in the high seas of the North Pacific.

I thank all the Members who joined us in this journey. Not only do we celebrate the special joyous moments, but we also look upon the hardships that we had to endure in the past to appreciate the good and the bad things that shaped us and made us what we are today.

This yearbook entails the events and activities of NPFC in the past year and I trust you will enjoy reading it as much as I did when reviewing our work in the year 2018.

Kenji Kagawa
Chairman
North Pacific Fisheries Commission

ACKNOWLEDGEMENT

First of all, I would like to express my special regards to all the Members of the North Pacific Fisheries Commission. Thank you very much for your generous time and effort in bringing forth to successful completion all the activities listed in this book.

I also want to give a shout-out to the Chairman of the Commission, Mr. Kagawa, for the support and guidance the Secretariat and I have received in the the past year. *Domo arigatou gozaimasu.*

Let me also take this opportunity to thank the Chairs of the Scientific Committee, Technical and Compliance Committee, Finance and Administration Committee, all working groups, and small committees for the grueling work on behalf of the Commission.

I also must give recognition to Urban Connections for assisting the Commission during our meetings through Mr. Alex Meyer, our brilliant Rapporteur, and the rest of their team for their assistance in putting together this book.

Lastly, I would like to convey my sincerest thanks to my dedicated staff for their unwavering support and diligence beyond the call of duty to bring this remarkable year to a productive close.

This book is a collection of a year's worth of activities and is published in an easy-to-read format for all our readers who share the same passion for conservation and sustainable use of the fisheries resources and protection of the marine environment in the North Pacific.

Thank you very much!

Dae-Yeon Moon
Executive Secretary
North Pacific Fisheries Commission

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North Pacific Fisheries Commission

3rd Annual Yearbook of Activities

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 the objective and to establish management regimes to ensure the conservation and sustainable use of the fisheries resources of the North Pacific Ocean and its sensitive marine biological ecosystems. As of the end of fiscal year 2018, there are eight (8) Members of the NPFC, namely: Canada, China, Japan, Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and Republic of Vanuatu. The Secretariat of the North Pacific Fisheries Commission (NPFC) is located in Tokyo, Japan. Dr. Dae-Yeon Moon of Korea is the current Executive Secretary and has been leading the Secretariat since September 2015.

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. Since the inception of the fishery, the 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 assessments of this particular species are the basis of establishing conservation and management measures for the sustainability of the fishery.

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

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

NPFC Personnel:

The personnel of the Secretariat and the Chairman are representatives of the multi-national and multi-cultural nature of the Commission. The Chairman is Kenji Kagawa of Japan, with the Executive Secretary being Dae-Yeon Moon of Korea. The Science Manager is Aleksandr Zavolokin of Russia and the Compliance Manager is Peter Flewwelling of Canada. The Executive Assistant Yuko Yoshimura-Takamiya and the Data Coordinator Mervin Ogawa are both Japanese nationals. The Secretariat has also engaged temporary consultants for a limited period of time to assist the Commission in finance, compliance and science-related activities.

Period of Coverage:

As this is the third yearbook, this publication picks up immediately after the last reported activity of the second yearbook and covers key activities and Commission meetings held from the 1st Meeting of the Technical Working Group on Chub Mackerel Stock Assessment in December 2017 up to the 4th Annual Commission Meeting in July 2018.

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

a. held scientific committee meetings and workshops on vulnerable marine ecosystems, bottom fish, chub mackerel and Pacific saury;
b. held the third technical and compliance committee meeting resulting in the adoption of the High Seas Boarding Implementation Plan;
c. held the second finance and administration committee meeting and endorsed the Secretariat Work Plan 2018, NPFC budget and estimates for fiscal years 2018 to 2021.

In addition, the Secretariat and selected NPFC members represented the Commission at the:

a. FAO Expert Workshop on the Global Review of Transshipment Operations in Rome, Italy;
b. PICES International symposium on Understanding Changes in Transitional Areas of the Pacific in La Paz, Mexico;
c. UN FSA (13th Round of Informal Consultations of States Parties to the Agreement) in New York, USA;
d. NPAFC ENFO Workshop and Annual meeting in Khabarovsk, Russia;
e. FAO's workshop on potential impacts of climate change on deep-sea ecosystems and the implications for the management of deep-sea fisheries in Massachusetts, USA
f. 1st Global Fisheries Forum and Seafood Expo in St. Petersburg, Russia
g. IOTC Electronic Monitoring and Reporting Information System (E-MARIS) in Cape Town, South Africa
h. IMCS/ABNJ - funded Tuna Compliance Network Workshop in Honiara, Solomon Islands
i. Chatham House 11th International Forum on Illegal, Unreported and Unregulated Fishing. Chatham House, UK

The following pages provide the final approved reports of the internal meetings held by the NPFC in its third year of formal operations in the chronological order in which the meetings were held.

1st Meeting of the Technical Working Group on Chub Mackerel Stock Assessment

4-5 December 2017
Vladivostok, Russia
Meeting Report

1st Meeting of the Technical Working Group on Chub Mackerel Stock Assessment

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Agenda Item 6. Review and evaluation of fishery-dependent and fishery-independent data available for stock assessment

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- 8.2 Discussion on potential models for chub mackerel stock assessment
- 8.3 Development of Stock Assessment Protocol

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MEETING REPORT

Agenda Item 1. Opening of Meeting

1. The 1st Meeting of the Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA01) took place in Vladivostok, Russia on 4-5 December 2017, and was attended by Members from China, Japan, and the Russian Federation.

2. The meeting was opened by the Science Manager, who outlined the objective and procedures for the meeting.

3. Russia welcomed the participants to Vladivostok and hoped that the meeting would yield fruitful discussions.

Agenda Item 2. Selection of Chair and Rapporteur

4. The Science Manager proceeded with the selection of the Chair and Rapporteur. Dr. Oleg Katugin (Russia) was unanimously selected as the Chair of the TWG CMSA. Mr. Alexander Meyer was selected as Rapporteur.

Agenda Item 3. Adoption of Agenda

5. The agenda was adopted without amendment. The participants agreed to finalize the Terms of Reference for the TWG CMSA under Agenda Item 4, and defer discussions on the Work Plan and Data List for Stock Assessment to Agenda Item 9.

Agenda Item 4. Finalization of the Terms of Reference and Work Plan of the TWG CMSA

6. The Science Manager provided an update on the intersessional work conducted on the draft Terms of Reference and Work Plan (NPFC-2017-TWG CMSA01-WP01).

7. The participants discussed and revised the draft Terms of Reference. The participants endorsed the Terms of Reference for TWG CMSA.

Agenda Item 5. Brief overview of chub mackerel biology, fisheries and management based on the results of the Chub Mackerel Workshop and 3rd Commission meeting

8. The Science Manager briefed the participants on the past Chub Mackerel Workshop and 3rd Commission meeting and pointed out Paragraph 7 of CMM 2017-07 for chub mackerel which tasks the Scientific Committee (SC) and TWG CMSA to conduct a stock assessment of chub mackerel as soon as possible, in accordance with the Terms of Reference agreed by the TWG CMSA at this meeting, even if such assessment is provisional, and provide advice and recommendations to the Commission.

9. Japan presented the future tasks in the stock assessment for chub mackerel (NPFC-2017-TWG CMSA01-WP04).

Agenda Item 6. Review and evaluation of fishery-dependent and fishery-independent data available for stock assessment

6.1 Data availability

10. Russia presented its data list for stock assessments, covering catch, size composition and length-weight relationship in 2016 (NPFC-2017-TWG CMSA01-WP03).

11. Japan presented its data availability, covering different categories of data, description, years, sample size, data coverage and potential issues of using such data (NPFC-2017-TWG CMSA01-WP04). Japan identified the need to conduct full reviews of length and age data sets, estimate catch at age with its uncertainties, and obtain reliable abundance indices by standardizing catch per unit effort (CPUE) for survey and commercial data.

12. The participants developed and endorsed a template for the potentially available data for stock assessment of chub mackerel. The participants agreed to work intersessionally to fill out the template in as much detail as possible, by 10 March 2018, for submission to the SC.

13. Russia presented the results of Russian fisheries for chub mackerel in 2016 (NPFC-2017-TWG CMSA01-WP08), noting that it had stopped fishing mackerel in 1988 and only recommenced fishing in 2015.

14. Russia presented the relationship between oceanographic conditions and distribution of mackerel in the Northwest Pacific, based on the data of TINRO-Center fisheries-independent surveys in 2014-2016 (NPFC-2017-TWG CMSA01-WP09), and noted the usefulness of salinity and type of water mass as an indicator of suitable habitat.

15. Russia pointed out that the size structure of chub mackerel from fisheries-independent surveys reflects the size structure of chub mackerel from fisheries data and is useful for stock assessment purposes.

6.2 Data quality and sources of uncertainty

16. The participants discussed sources of data uncertainty, including IUU catch, bycatch, discards, and different types of CPUE among Members resulting from differences in fishing gear and practices among Members.

6.3 Data sharing

17. As information for the discussions on data sharing, the Science Manager presented the North Pacific Fisheries Commission's (NPFC) Interim Guidance for Management of Scientific Data used in Stock Assessments adopted by the Commission in July 2017 and outlined that it provides the basis for the sharing of scientific data among Members.

18. The participants recognized the necessity to share data for the chub mackerel stock assessment and agreed that such data should only be shared within the TWG CMSA and be disseminated in accordance with the above Interim Guidance.

Agenda Item 7. Review and evaluation of fishery-dependent and fishery-independent indices

7.1 Quality of the indices

19. Russia presented its work on the CPUE standardization for its historical catch of chub mackerel in the Northwest Pacific Ocean (NPFC-2017-TWG CMSA01-WP02).

20. Japan presented its work to standardize abundance indices for recruitment and spawning stock biomass of the chub mackerel in the Northwest Pacific (NPFC-2017-TWG CMSA01-WP05). Japan has conducted three analyses of CPUE standardization for chub mackerel. The standardized CPUEs have been used as abundance indices for tuned virtual population analysis (VPA) in Japan's latest stock assessment of chub mackerel. High priority of model development should be put on age-structured stock assessment models.

21. The participants discussed the issue relating to the definition of SSB and recruitment and also suggested that further exploration for defining the age of the recruitment is necessary.

7.2 Protocol for CPUE Standardization

22. The participants discussed and revised the draft CPUE Standardization Protocol (NPFC-2017-TWG CMSA01-WP06 (Rev. 1)). The participants endorsed the CPUE Standardization

Protocol for Chub Mackerel.

Agenda Item 8. Stock assessment of chub mackerel

8.1 Review of existing stock assessment methods

8.2 Discussion on potential models for chub mackerel stock assessment

23. Japan presented on existing methods and potential models for chub mackerel stock assessment (NPFC-2017-TWG CMSA01-WP04). Japan reviewed the features of biomass dynamics models, delay-difference models, virtual population analysis, statistical catch-at-age methods, and integrated analysis. Japan suggested using a tuned VPA as the fundamental platform and exploring extensions from the model.

24. China presented a comparison of conventional and state-space production models in fisheries stock assessment and management using jumbo flying squid data as a case study (NPFC-2017-TWG PSSA02-WP09). The state space model performed better in terms of accuracy and precision of parameter estimates, but the error estimate could be biased and imprecise and the conventional model performed better in this regard.

25. China pointed out that Bayesian state-space production model would be a useful tool for potential validation when there is uncertainty in catch-at-age data. China also suggested that by using the same types of data, models such as statistical catch-at-age model are supposed to have equal chance to be used as a candidate model. It is not appropriate to determine a base model without testing other models.

26. The participants discussed potential models for the chub mackerel stock assessment and agreed that using an age-structured model is a common goal. The participants proposed four potential models for the chub mackerel stock assessment: a VPA model, a statistical catch-at-age model, a cohort model with Kalman filter, and a state-space production model.

27. The participants agreed to develop the operating model to test the four proposed stock assessment models in accordance with the Stock Assessment Protocol for Chub Mackerel. The operating model should be reviewed externally. The participants agreed to informally establish a small working group to conduct this work with the following representatives: Ms. Bai Li, Dr. Alexander Mikheyev, and Dr. Shota Nishijima. The work for the operating models will be conducted intersessionally.

28. Japan stated that, based on its many years of experience managing the chub mackerel stock and collecting various related data, and from the perspective of using the best available data, the VPA model should be given first priority. Furthermore, no satisfactory rationale has been given

for the use of models other than the VPA model and such models are unacceptable.

8.3 Development of Stock Assessment Protocol

29. The participants discussed and revised the draft Stock Assessment Protocol (NPFC-2017-TWG CMSA01-WP07 (Rev 1)). The participants endorsed the Stock Assessment Protocol for Chub Mackerel.

Agenda Item 9. Next steps towards chub mackerel stock assessment and next TWG CMSA meeting

30. The participants discussed and revised the draft 2017-2021 Work Plan for TWG CMSA. The participants developed the outline of the TWG CMSA Work Plan, and agreed to add further details to the Work Plan intersessionally, by 10 March 2018, for submission to the SC. They also agreed to update the plan as necessary based on the progress of the modeling work.

31. The participants recommended to hold the next TWG CMSA meeting in the last quarter of 2018.

Agenda Item 10. Other matters

32. No other matters were discussed at the TWG CMSA01.

Agenda Item 11. Recommendations to the Scientific Committee

33. The following recommendations were made:
    a. The TWG CMSA endorsed its Terms of Reference.
    b. The TWG CMSA endorsed a template for the potentially available data for stock assessment of chub mackerel.
    c. The TWG CMSA recognized the necessity to share data for the chub mackerel stock assessment and agreed that such data should only be shared within the TWG CMSA and be disseminated in accordance with the Interim Guidance for Management of Scientific Data used in Stock Assessments.
    d. The TWG CMSA endorsed the CPUE Standardization Protocol for Chub Mackerel.
    e. The TWG CMSA agreed that using an age-structured model is a common goal. The participants proposed four potential models for the chub mackerel stock assessment: a VPA model, a statistical catch-at-age model, a cohort model with Kalman filter, and a state-space production model.
    f. The TWG CMSA endorsed the Stock Assessment Protocol for Chub Mackerel.
    g. The TWG CMSA agreed to develop the operating model to test the four proposed stock assessment models in accordance with the Stock Assessment Protocol. The TWG CMSA recommended the SC to ensure the external review of the operating model.

h. The TWG CMSA recommended to SC to consider adoption of the 2017-2021 Work Plan for TWG CMSA finalized intersessionally by the TWG CMSA members.
i. The TWG CMSA recommended to hold its next meeting in the last quarter of 2018.

Agenda Item 12. Adoption of the Report

34. The TWG CMSA01 Draft Report was adopted by consensus.

Agenda Item 13. Close of the Meeting

35. The TWG CMSA01 closed at 20:05 on 5 December 2017. The participants expressed their gratitude for the skilled facilitation of the TWG CMSA Chair.

Annexes

Terms of Reference for the Technical Working Group on the Chub Mackerel Stock Assessment (TWG CMSA)

Template for potentially available data for chub mackerel stock assessment

CPUE Standardization Protocol for Chub Mackerel

Stock Assessment Protocol for Chub Mackerel

Annex

Terms of Reference for the Technical Working Group on the Chub Mackerel Stock Assessment (TWG CMSA)

1. To review and evaluate fishery data
   - Catch and efforts (including spatial-temporal distribution of landings and discards)
   - Age/size composition data
   - Evaluation of data quantity, data quality, sources of uncertainty
   - Others
   - Recommendation for future works

2. To review and evaluate fishery-dependent and fishery-independent indices
   - Evaluate/update sampling design for fishery-independent survey
   - Characterize the source of uncertainty for the fishery-dependent and fishery-independent data
   - Review/update the CPUE standardization Protocol
   - Conduct CPUE standardization
   - Review and update fishery-dependent and fishery-independent indices
   - Recommendation for future works

3. To review and update biological and other information/data relevant to stock assessment
   - Stock structure
   - Growth
   - Reproduction and maturity schedule
   - Natural mortality
   - Migration pattern
   - Environmental influences (e.g. oceanographic, habitat, or species interactions)
   - Others
   - Evaluation of data quantity, data quality, sources of uncertainty
   - Recommendation for future works

4. To conduct the stock assessment
   - Review existing/potential stock assessment methods or develop new methods
   - Application of candidates of stock assessment models and comparison of the results (if needed)
   - Determine models for the chub mackerel stock assessment
   - Conduct stock assessment following the Stock Assessment Protocol
   - Create the scientific advice on management based on the results of the stock assessment

- Recommendation for future works

5. To facilitate data- and code- sharing processes

6. To review/improve presentation of stock assessment results (including stock status summary report in a format to be determined by the Working Group)

7. To develop Management Strategy Evaluation framework

Annex

Template for potentially available data for chub mackerel stock assessment

Category and data sources	Description	Years with available data	Average sample size/year or data coverage	Potential issues to be reviewed
JAPAN				
Catch statistics				
Purse seine fishery Dip net fishery Set net	Official statistics, reports from fisheries associations and markets	Official statistics: 1950-2016, other reports: 1970-2017	Coverage=100%	The chub mackerel catches are estimated from chub and spotted mackerel catches based on port sampling data for purse seine and set net fisheries
Size composition data				
Length measurements	Port sampling by 17 local fishery institutes in 17 prefectures	1970-2017	20,000-120,000 (average 40,000) fish/year (ca. 100 measurements per sampling)	Data coverage review
Aging	Port sampling by 17 local fishery institutes in 17 prefectures	1970-2017	500-1000 fish/year	Data coverage review
Catch at age (CAA)	Estimate CAA from the above data	1970-2017	Age-length keys are created approximately by quarter and local regions	Evaluate uncertainty of catch at age, especially on changes of growth depending on recruitment abundance

Abundance indices (survey)				
Spring survey for recruitment	Mainly for sardine and chub mackerel, mid-water trawl	1995-2017	30-60 stations/year	Review survey protocol and conduct standardization
Summer survey for recruitment	Mainly for saury, mid-water trawl	2001-2017	60-80 stations/year	
Autumn survey for recruitment	Mainly for sardine and chub mackerel, mid-water trawl	1995-2017	30-60 stations/year	
Year-round for egg density	Almost all local fishery institutes join this survey program. NORPAC net. Not only for chub mackerel.	1978-2017	ca. 6000 stations in total, 1000-4000 stations with chub mackerel eggs/year	
Abundance indices (commercial)				
Dip net fishery	Log book data are collected from fishermen in Kanagawa prefecture (ca. 1/3 of the total)	2003-2017	10-100/year	Standardization, recently the fishing effort decrease, reliability??
RUSSIA				
…				
CHINA				
…				

Annex

CPUE Standardization Protocol for Chub Mackerel

CPUE is catch per unit effort obtained either from fishery independent or fishery dependent data. The use of CPUE in a stock assessment implicitly assumes that CPUE is proportional to stock abundance/biomass. However, many factors other than stock abundance/biomass may influence CPUE. Thus, any other factors, other than stock abundance/biomass, that may influence CPUE should be removed from the CPUE index. The process of reducing/removing the impacts of these factors on CPUE is referred to as CPUE standardization.

The following protocol is proposed for the CPUE standardization:

(1) Conduct a thorough literature review to identify potential explanatory variables (i.e., spatial, temporal, environmental, and fisheries variables) that may influence CPUE values;
(2) Plot spatio-temporal catch, effort and nominal CPUE distributions and determine temporal and spatial resolution for CPUE standardization;
(3) Make scatter plots (for continuous variables) and/or box plots (for categorical variables) and present correlation matrix if possible to evaluate correlations between each pair of those variables;
(4) Describe selected explanatory variables based on (1)-(3) to develop full model for the CPUE standardization;
(5) Specify model type and fit the data to the assumed statistical models (i.e., GLM, GAM, Delta-lognormal GLM, Neural Networks, Regression Trees, Habitat based models, and Statistical habitat based models);
(6) Evaluate and select the best model(s) using methods such as likelihood ratio test, information criterions, cross validation etc.;
(7) Evaluate if distributional assumptions are satisfied and if there is a consistent spatial/temporal distribution of residuals in CPUE standardization modeling; (i.e. residual plots along with predicted values and important explanatory variables, check dispersion assumption)
(8) Present estimated relationship between dependent variable and independent variables. Check whether it is interpretable.
(9) Extract yearly standardized CPUE and evaluate associated uncertainty.
(10) Plot nominal and standardized CPUEs over time. When the trends between nominal and standardized CPUE are largely different, explain the reasons (e.g. spatial shift of fishing efforts), whenever possible.

Annex

Stock Assessment Protocol for Chub Mackerel

The following procedures were proposed for Pacific chub mackerel stock assessment and adopted at the 1st meeting of the Technical Working Group on Chub Mackerel Stock Assessment in December 2017.

(1) Identify the data that will be needed and available to the stock assessment;
(2) Evaluate quality, quantity, and potential error sources of available data (e.g., catch at age, weight at age, length at age), life-history parameters (e.g., natural mortality, growth, and maturity), and abundance indices;
(3) Determine the framework of operating model for extensive simulation tests with the inclusion of potential uncertainties of observed data and life-history parameters;
(4) Create base case scenarios and alternative scenarios for the stock assessment models by the operating model;
(5) External review of the operating model and improvement of the operating model, if needed;
(6) Develop multiple stock assessment models and conduct the performance tests by applying the models to the data generated from the operating model;
(7) Select the best candidate model(s) for the full stock assessment of Pacific chub mackerel;
(8) Apply the selected model(s) to the full data set of Pacific chub mackerel;
(9) Conduct diagnostics of model convergence, plot and evaluate residual patterns, conduct sensitivity analyses, compare prior and posterior distributions for key model parameters (if using Bayesian approach), and evaluate biological implications of the estimated parameters;
(10) Develop retrospective analysis to verify whether any possible systematic inconsistencies exist among model estimates of biomass and fishing mortality; likelihood profiles by each data component is also useful to find systematic inconsistencies;
(11) Review and finalize stock assessment results;
(12) Review and estimate biological reference points and associated uncertainties;
(13) Identify target and limit reference points;
(14) Determine if the stock is “overfished” and “overfishing”, for example using the Kobe plot;
(15) Develop alternative harvest control rule (HCR) for the projection (e.g., 5-year projection);
(16) Conduct risk analysis for each level of fishing impacts and each HCR to develop decision tables with alternative state of nature;
(17) Provide stock status, decision tables, and scientific advice on HCR to SC.

2nd Meeting of the Technical Working Group on Pacific Saury Stock Assessment

6-8 December 2017
Vladivostok, Russia
Meeting Report

2nd Meeting of the Technical Working Group on Pacific Saury Stock Assessment

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Agenda Item 1. Opening of the Meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Overview of the outcomes of previous NPFC meetings relevant to Pacific saury

Agenda Item 4. Review of the Terms of References of the TWG PSSA for 2017-2021

Agenda Item 5. Review of fishery data and their availability
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- 5.2 Recommendations on data collection and data sharing
  - 5.2.1 Data collection template
  - 5.2.2 Data security regulations
  - 5.2.3 Data sharing

Agenda item 6. Review of fishery-dependent and fishery-independent indices
- 6.1 Review of the existing protocol
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- 6.4 Recommendations on future works

Agenda Item 7. Review and update of biological information/data

Agenda item 8. Update of the stock assessment using "provisional base models" (BSSPM)
- 8.1 Review of the existing model, stock assessment protocol and specification
- 8.2 Update of the analyses using a new set of data
- 8.3 Implication for management of Pacific saury fisheries
  - 8.3.1 Stock biomass, fishing mortality and associated uncertainties
  - 8.3.2 Biological reference points
  - 8.3.3 Risk analyses of alternative catch levels
- 8.4 Possible improvements of the models within BSSPM
- 8.5 Recommendations on future works

Agenda item 9. Exploration of stock assessment models other than existing "provisional base models"
- 9.1 Data invention/availability (including the identification of potential covariates)
- 9.2 Initial discussion on age/size/stage-structured models
- 9.3 Identification of information/data gaps and limits
- 9.4 Recommendations on future works

Agenda item 10. Other matters
- 10.1 Review of presentation of stock assessment results
- 10.2 Facilitation of code-sharing processes
- 10.3 Initial discussion on Management Strategy Evaluation
- 10.4 Priorities for next meeting

Agenda Item 11. Recommendations to the Small Scientific Committee on Pacific Saury

Agenda Item 12. Adoption of Report

Agenda Item 13. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of Meeting

1. The 2nd Meeting of the Technical Working Group on Pacific Saury Stock Assessment (TWG PSSA02) took place in Vladivostok, Russia on 6-8 December 2017, and was attended by Members from China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, and Vanuatu.

2. The meeting was opened by the TWG PSSA Chair, Dr. Toshihide Kitakado, who outlined the objectives and procedures for the meeting.

3. Russia warmly welcomed the participants to Vladivostok.

Agenda Item 2. Adoption of Agenda

4. The participants agreed to add three subsections under Agenda 5.2: 5.2.1 Data collection template; 5.2.2 Data security regulations; and 5.2.3 Data sharing.

5. The revised agenda was adopted.

Agenda Item 3. Overview of the outcomes of previous NPFC meetings relevant to Pacific saury

6. The Chair briefed the participants on the outcomes of the 1st Pacific Saury Stock Assessment Workshop, the 1st TWG PSSA meeting (TWG PSSA01), the 2nd meeting of the Small Scientific Committee on Pacific Saury (SSC PS02) and Scientific Committee (SC02) meeting in 2016 and 2017. According to an agreement in the TWG PSSA01, a stock assessment was conducted by three Members (China, Japan and Chinese Taipei) based on three base case scenarios as well as one sensitivity scenario, and the TWG PSSA compiled the results as the provisional stock assessment results. The SSC PS concluded that despite small variations among the three Members' stock assessments and among the three base-case scenarios, it is likely that the Pacific saury stock is not overfished and is not experiencing overfishing. It also recommended maintaining CMM 15-02 in its current form and not expanding fishing efforts in 2018. These recommendations were endorsed by the SC and adopted by the Commission.

7. The Science Manager pointed out Paragraph 5 of CMM 2017-08 for Pacific saury, which tasks the SC, SSC PS and TWG PSSA to continue their work 1) to improve the current stock assessment and other analysis and 2) to provide advice and recommendations to the Commission at the next Commission meeting in 2018. He also noted Paragraph 7 of the same CMM which stipulates that CMM 2017-08 shall be effective for one year, subject to review at the next Commission meeting in 2018.

Agenda Item 4. Review of the Terms of References of the TWG PSSA for 2017-2021

8. The participants reviewed the Terms of Reference and agreed that it does not require any revisions on the substance, but does require minor editing.

Agenda Item 5. Review of fishery data and their availability

5.1 Catch series, age/size composition data and others

9. Japan presented its review of Pacific saury fishery data and their availability (NPFC-2017-TWG PSSA02-WP04). Japan touched upon its historical Pacific saury fisheries, current fishing grounds and landing sites, raw and compiled data collected from fisheries from 1980-2016, and the fisheries condition in 2017. In particular, Japan expressed concern over the extreme decline in the levels of its Pacific saury catch and catch per unit effort (CPUE) in 2017.

10. China expressed its concern over the increase of fishing effort by one Member, which mainly conducts Pacific saury fishery in its area of jurisdiction, in the Convention area since 2015. In response, the Member explained that the migratory pattern and fishery grounds of Pacific saury have changed.

11. Russia presented the results of its fisheries for Pacific saury in 2016 (NPFC-2017-TWG PSSA02-WP14). There was a very low catch of Pacific saury by Russian vessels in 2016 compared to 2014 and 2015. This could result from a significant number of stormy days and a decline in the number of fishing vessels, as well as from changes in oceanography and Pacific saury migration patterns.

12. Russia informed the participants that its data on catch and size composition of Pacific saury in 2016 were available and could be shared (NPFC-2017-TWG PSSA02-WP01).

13. Chinese Taipei presented the results of its fisheries for Pacific saury in 2011-2016.

14. Russia raised the issue of possible duplicate catch reporting from its EEZ, and Members agreed to work intersessionally to resolve this issue.

15. Chinese Taipei presented the size category/body length/age composition data from its fishing fleets.

16. Vanuatu presented the results of its fisheries for Pacific saury. The participants thanked Vanuatu for bringing such information to the table as this is the first opportunity to review it under the TWG PSSA.

17. The participants agreed to create a joint spatial/temporal map of Members' catch and effort on Pacific saury with a spatial resolution of one degree grids and a temporal resolution of one month. To conduct this work, the participants proposed establishing a small working group with the same membership as the Corresponding Group on Data Collection Template for Pacific saury (Chuanxiang Hua, Satoshi Suyama, Eunjung Kim, Dmitrii Antonenko, Wen-Bin Huang, Toshihide Kitakado, Aleksandr Zavolokin). The participants agreed to submit the necessary data.

18. The participants reviewed a table of Members' annual Pacific saury catch in the Northwestern Pacific Ocean. Vanuatu agreed to provide its updated annual catch data by the end of February 2018. The updated file will be posted on the NPFC website.

5.2 Recommendations on data collection and data sharing

5.2.1 Data collection template

19. Korea presented the current status of the development of fisheries report templates for the stick-held dip net fishery.

20. The participants discussed the template and suggested that the name of the template be changed from "fisheries report templates" to "fisheries information templates."

5.2.2 Data security regulations

21. As information for the discussions on data security regulations, the Science Manager presented the North Pacific Fisheries Commission's (NPFC) Interim Guidance for Management of Scientific Data Used in Stock Assessments adopted by the Commission in July 2017 and

outlined that it provides the basis for the sharing of scientific data among Members.

5.2.3 Data sharing.

22. The participants recognized the necessity to share data for the Pacific saury stock assessment and agreed that such data should only be shared within the TWG PSSA and be disseminated in accordance with the above Interim Guidance.

Agenda Item 6. Review and evaluation of fishery-dependent and fishery-independent indices

6.1 Review of the existing protocol

23. The participants reviewed and revised the CPUE Standardization Protocol for Pacific Saury. The participants endorsed the revised CPUE Standardization Protocol for Pacific Saury (Annex D).

6.2 Review/update of the indices

24. Japan presented an update on the standardized CPUE for its stick-held dip net fishery for Pacific saury and its modification (NPFC-2017-TWG PSSA02-WP06). Japan explained that it has divided its CPUE data into two periods: data from 1980 to 1993 and 1994 to 2016. This is to reflect the impact of the improvement of fishing efficiency resulting from innovation in fishing equipment in the 1980s, and the impact of the entry into force of the United Nation's moratorium on large-scale drift net fisheries in 1993 at the same time as the significance of Pacific saury fisheries in Japan was rapidly increasing.

25. Korea presented an update on its work to standardize its stick-held dip net fishery in the Northwestern Pacific Ocean from 2001-2016. The participants requested Korea to submit its working paper describing methods and results of standardized CPUE for review by the TWG PSSA.

26. Chinese Taipei presented the Pacific saury CPUE standardization for its stick-held dip net fishery in the Northwestern Pacific Ocean (NPFC-2017-TWG PSSA02-WP03). Chinese Taipei used four models, including year, month, area, latitude, longitude, gross register tonnage, and water temperature as variables. The results were very similar and, in general, the standardized CPUE showed a slight increase from 2001-2010, followed by a sharp increase through to 2014, and then a decline until 2016. Chinese Taipei recommended the standardized CPUE derived from Model-1.

27. Russia presented the standardization of the Pacific saury CPUE records by Russian VMS and ERP system (NPFC-2017-TWG PSSA02-WP02). Russia selected optimum GAM by minimum

value of AIC. It included year, month and their interaction, vessel code as categorical factors, and sea surface temperature (SST) and proxy for the moonlight intensity as continuous variables smoothed with thin plate splines.

28. China presented the standardization of CPUE data of Pacific saury caught by its stick-held dip net fishery (NPFC-2017-TWG PSSA02-WP08). China used two models, which included latitude, longitude, year, month, vessel length, SST, sea surface temperature gradient, sea surface height, and lunar day.

29. Japan presented the results of the Japanese fishery-independent surveys for Pacific saury, which have been conducted since 2003, and the verification in biomass estimating method (NPFC-2017-TWG PSSA02-WP05). Based on the SC's request that Japan should reduce the uncertainty in its fishery-independent survey, Japan verified and modified its biomass estimation method in the survey area. Japan concluded that the Pacific saury biomass estimates based on the Japanese fishery-independent surveys are indispensable data to the stock assessment. Furthermore, the survey results in 2016 and 2017 suggest that the biomass of Pacific saury has decreased since 2016 and more abruptly in 2017.

6.3 Evaluation of the quality of the indices

30. The participants noted there were a few fishing efforts before 2012 in China's CPUE data. China agreed to submit a revised standardized CPUE covering 2003 to 2016 for the stock assessment update, documenting the rationale for its revisions.

31. Some participants expressed concern over the time series of Japan's standardized CPUE, noting the bias in the data in the 1980s due to unresolved catchability changes across those years. The participants shared the concern. Since use of these data may be influential to the stock assessment, Japan stated its intention to reconsider the handling of the data and estimation of standardized CPUE. Japan suggested removing the earlier period of its CPUE data. Other participants expressed the concern that Japan's standardized CPUE did not have descriptions following the CPUE Standardization Protocol and it is therefore difficult to judge its quality. Japan agreed to submit its updated CPUE data, including data for 2017, with better documentation for the stock assessment update and document its rationale for suggesting the deletion of the earlier period.

32. China suggested including the CPUE as two indices in the stock assessment model with different catchability of q to resolve the problems in Japan's standardized CPUE.

33. Korea agreed to submit its updated CPUE data up to 2016 for the stock assessment update.

34. The participants agreed to use the CPUE data for 2001-2016 that Chinese Taipei has submitted to the TWG PSSA02 for the stock assessment update.

35. Russia agreed to submit two separate sets of CPUE data by extending its coverage to include the years back to 1994 for the stock assessment update, resulting in one set of CPUE data for 1994-2000 and one for 2001-2017. Russia will document the rationale for dividing the CPUE data.

36. The participants discussed Members' CPUE indices and compiled a comparison table with each Member's CPUE to evaluate if the indices meet the CPUE Standardization Protocol (Annex).

37. China pointed out that the sampling design and estimation method of Japan's biomass index are unclear. China suggested that Japan use a different formula for the abundance estimation. Japan explained that it already showed the methodology at the previous TWG PSSA and therefore did not fully describe it at this meeting. Nevertheless, Japan agreed to recalculate the biomass estimate, compare it with the initial estimate, and select the best estimate, documenting the rationale for the selection.

38. When reviewing each Member's CPUE indices, the participants noted that Japan's biomass index should also be reviewed. The participants agreed that Japan will submit detailed papers on its biomass index for review by the TWG PSSA, and that, if necessary, the TWG PSSA will develop a protocol for fisheries-independent index at its next meeting.

6.4 Recommendations on future work

39. China, Japan, Korea and Russia agreed to submit their revised national CPUE standardization data by the end of February 2018 (see more details under Agenda Item 10).

40. Japan agreed to submit its revised fishery-independent index by the end of February 2018.

41. The participants proposed holding an informal meeting of the TWG PSSA on the sidelines of the SSC PS, in order to update the stock assessment and develop scientific advice on the management of Pacific saury fisheries (see Agenda Item 8).

42. The participants agreed to move forward in a new direction to aggregate catch and effort data

over Member's fishery to draw a joint CPUE index. The intention is to resolve different patterns in standardized indices among Members and to increase spatial and temporal coverage of catch and effort data. Considering the difficulty in sharing raw data on catch and effort, the participants agreed to share them by submitting catch and effort data by month and one degree grids, and to conduct a joint CPUE standardization based on the data after the 2018 SC meeting.

Agenda Item 7. Review and update of biological information/data

43. Japan presented on the stock identity, spawning ground, maturation, and migration of Pacific saury (NPFC-2017-TWG PSSA02-WP07).

44. The participants encouraged Japan to continue its research on the biological size and maturation schedule of Pacific saury, which will be important for the development of age-structured models. The TWG PSSA encouraged Members to report on any such research.

45. Japan reported that it has established a group on "Mendeley" for TWG PSSA members to share literature on Pacific saury amongst themselves, and encouraged them to join the group.

Agenda Item 8. Update of the stock assessment using "provisional base models" (BSSPM)

8.1 Review of the existing model, stock assessment protocol and specification

46. China presented a comparison of conventional and state-space production models using jumbo flying squid data as a case study (NPFC-2017-TWG PSSA02-WP09), which suggested that 1) the state-space model produced more accurate and precise parameter estimates; 2) the precision and accuracy of the process error estimation should be carefully reviewed.

8.2 Update of the analyses using a new set of data

47. Chinese Taipei presented a stock assessment update for Pacific saury (NPFC-2017-TWG PSSA02-WP15).

48. Japan presented a stock assessment update for Pacific saury (NPFC-2017-TWG PSSA02-WP11).

49. China presented a stock assessment update for Pacific saury (NPFC-2017-TWG PSSA02-WP12).

8.3 Implication for management of Pacific saury fisheries

8.3.1 Stock biomass, fishing mortality and associated uncertainties

8.3.2 Biological reference points

8.3.3 Risk analyses of alternative catch levels

50. The participants noted that, due to the last minute changes in some Members' data and various other issues with the CPUE data, they were not able to present and revise the results and conclusions of the current stock assessment at the current meeting and agreed to defer discussions on the implications for the management of Pacific saury fisheries to the SSC PS meeting in April 2018.

51. China noted that the current stock status of Pacific saury is likely not overfished and overfishing is not occurring, which is derived from the current updated stock assessment report, whose data and approaches have been approved by TWG PSSA01. China also expressed its disappointment that there is no agreement on the stock status of the Pacific saury at the TWG PSSA02 due to last minute changes to the input data by one Member during the meeting. Such last minute changes are not professional, unacceptable, and should not be allowed. This is a breach of trust and delayed the progress of the stock assessment for Pacific saury.

52. Japan noted that the participants of the present TWG PSSA meeting could critically and successfully examine the Pacific saury abundance indices provided by fishing Members and could detect some improvable parts in the indices. Japan therefore considered that the Members will be able to continue updating the previous provisional stock assessment of Pacific saury, even though the working papers on Pacific saury stock assessment submitted to the present TWG will need further revision. This is a significant scientific achievement of the meeting. In response to China's statement, Japan clarified that the present TWG PSSA meeting could not complete the update of the stock assessment of Pacific saury due to a last minute change and also various issues in the abundance indices of several Members.

8.4 Possible improvements of the models within BSSPM

53. In discussions on the presentations on stock assessment by China, Japan and Chinse Taipei, the participants noted the usefulness of further analyses of the sensitivity of stock assessment results to the assumptions of priors and selection of abundance indices, and encouraged the stock assessment scientists to conduct such analyses and report on the results.

8.5 Recommendations on future work

54. China, Japan, and Chinese Taipei agreed to submit their updated stock assessment papers by 6 April 2018, if possible.

Agenda Item 9. Exploration of stock assessment models other than existing "provisional base models"

55. Russia presented a stock assessment of Pacific saury in the Northwestern Pacific Ocean using a state-space biomass dynamic model that incorporates seasonality (NPFC-2017-TWG PSSA02-WP13).

9.1 Data invention/availability (including the identification of potential covariates)

9.2 Initial discussion on age/size/stage-structured models

9.3 Identification of information/data gaps and limits

56. The participants compiled a table of each Member's data availability on size composition and catch/CPUE data for Pacific saury (Annex) for future consideration of new stock assessment.

9.4 Recommendations on future work

57. The participants encouraged stock assessment scientists to construct new models for future stock assessments based on the data identified during the meeting, the biological information presented by Japan, and the Mendeley group developed by Japan.

Agenda Item 10. Other matters

10.1 Review of presentation of stock assessment results

58. The participants reviewed the presentation of the stock assessment results. They agreed to update the formats of the stock assessment report and results intersessionally, if needed.

10.2 Facilitation of code-sharing processes

59. The participants agreed to defer discussion on code-sharing processes until the next TWG PSSA meeting.

10.3 Initial discussion on management strategy evaluation

60. The participants agreed to defer discussion on management strategy evaluation until the next TWG PSSA meeting.

10.4 Priorities for next meeting

61. The participants discussed and decided on the work schedule for the TWG PSSA up to the 3rd SSC PS and 3rd SC meetings.

62. The participants discussed the 2017-2021 Work Plan for the TWG PSSA.

Agenda Item 11. Recommendations to the Small Scientific Committee on Pacific Saury

63. The following recommendations were made:
    a. The TWG PSSA agreed to create a joint spatial/temporal map of Members' catch and effort

on Pacific saury with a spatial resolution of one degree grids and a temporal resolution of one month. To conduct this work, the participants proposed establishing a small working group with the same membership as the Corresponding Group on Data Collection Template for Pacific saury.

b. The TWG PSSA endorsed the revised CPUE Standardization Protocol for Pacific Saury (Annex).
c. The TWG PSSA recognized the necessity to share data for the Pacific saury stock assessment, and agreed that such data should only be shared within the TWG PSSA and be disseminated in accordance with the Interim Guidance for Management of Scientific Data used in Stock Assessments.
d. The TWG PSSA agreed to move forward in a new direction to aggregate catch and effort data over Member's fishery to draw a joint CPUE index to resolve different patterns in standardized indices among Members and to increase spatial and temporal coverage of catch and effort data. The TWG PSSA agreed to share catch and effort data by month and one degree grids, and to conduct a CPUE standardization based on the data after the 2018 SC meeting.
e. The TWG PSSA noted that, due to the last minute changes in some Members' data and various other issues with the CPUE data, they were not able to present and revise the results and conclusions of the current stock assessment at the current meeting and proposed deferring discussions on the implications for the management of Pacific saury fisheries to the SSC PS meeting in April 2018. For this, the TWG PSSA proposed holding an informal meeting on the sidelines of the SSC PS.
f. The TWG PSSA requested the SC to consider revision of the 2017-2021 Work Plan with regards to detailed processes to enable the TWG PSSA to fulfil its duties more efficiently.
g. The TWG PSSA recommended holding its next meeting in the last quarter of 2018, preferably after 5 November, and, if necessary, extending the duration of the meeting to 4-5 days.

Agenda Item 12. Adoption of the Report

64. The TWG PSSA02 Report was adopted by consensus.

Agenda Item 13. Close of the Meeting

65. The TWG PSSA02 closed at 18:30 on 8 December 2017.

Annexes

CPUE Standardization Protocol for Pacific Saury

Comparison table for evaluation of the Members' standardized CPUE indices against the CPUE Standardization Protocol

Data availability on size composition and catch/CPUE for Pacific saury

Annex

CPUE Standardization Protocol for Pacific Saury

The use of CPUE in a stock assessment implicitly assumes that CPUE is proportional to stock abundance/biomass. However, many factors other than stock abundance/biomass may influence CPUE. Thus, any other factors, other than stock abundance/biomass, that may influence CPUE should be removed from the CPUE index. The process of reducing/removing the impacts of these factors on CPUE is referred to as CPUE standardization.

The following protocol is proposed for the CPUE standardization:

(1) Conduct a thorough literature review to identify key factors (i.e., spatial, temporal, environmental, and fisheries variables) that may influence CPUE values;

(2) Determine temporal and spatial scales for data grouping for CPUE standardization;

(3) Plot spatio-temporal distributions of fishing efforts and catch to evaluate spatio-temporal patterns of fishing effort and catch;

(4) Calculate correlation matrix to evaluate correlations between each pair of those variables;

(5) Identify potential explanatory variables based on (1)-(4) as well as interaction terms to develop full model for the CPUE standardization;

(6) Make statistical assumptions on the full models and fit the data to the assumed statistical models (i.e., GLM, GAM, Delta-lognormal GLM, Neural Networks, Regression Trees, Habitat based models, and Statistical habitat based models);

(7) Select and evaluate the models using methods such as likelihood ratio, AIC/BIC and cross validation;

(8) Evaluate if distributional assumptions are satisfied and if there is a consistent spatial/temporal distribution of residuals in CPUE standardization modeling;

(9) Determine the optimal model to estimate yearly standardized CPUE and their associated uncertainty;

(10) Plot nominal and standardized CPUEs over time.

Annex

Comparison table for evaluation of the Members' standardized CPUE indices against the CPUE Standardization Protocol

CPUE Standardization Protocol	China	Japan	Korea	Russia	Chinese Taipei
(1) Conduct a thorough literature review to identify key factors (i.e., spatial, temporal, environmental, and fisheries variables) that may influence CPUE values;	Yes (supplement figures 1-4 and Table 1)	Yes (see Sakai et al. 2017)	Yes (see Sakai et al. 2017)	Yes	Yes (see Sakai et al. 2017)
(2) Determine temporal and spatial scales for data grouping for CPUE standardization;	Yes	Yes	No, not available	Yes	Yes; Huang et al. (2007)
(3) Plot spatio-temporal distributions of fishing efforts and catch to evaluate spatio-temporal patterns of fishing effort and catch;	Yes (supplement figure5)	WP04; Fig. 3	No, not available	Yes (WP14)	Yes; Figs. 2 and 3
(4) Calculate correlation matrix to evaluate correlations between each pair of those variables;	Yes (supplement Table 2)	No, not available	No, not available	Yes (see Fig. 5)	Fig. 1
(5) Identify potential explanatory variables based on (1)-(4) to develop full model for the CPUE standardization;	Yes (WP08)	No, not available	No, not available	Yes	4 models, Page 3
(6) Make statistical assumptions on the full models and fit the data to the assumed statistical models (i.e., GLM, GAM, Delta-lognormal GLM, Neural Networks, Regression Trees, Habitat based models, and Statistical habitat based models);	Yes	No, not available	No, not available	Yes	Log-normal; Page 3
(7) Select and evaluate the models using methods such as likelihood ratio, AIC, BIC or cross validation;	Yes (WP08 Table 1 and 2)	No information was given	No, not available	Yes (see Table 1)	AIC and R2; Table 1

(8) Evaluate if distributional assumptions are satisfied and if there is a consistent spatial/temporal distribution of residuals in CPUE standardization modeling;	Yes (WP08, Fig.1 and 2)	No, not available	No, not available	Yes (see Fig. 8,9)	Fig. 4 and 5
(9) Determine the optimal model to estimate yearly standardized CPUE and their associated uncertainty.	Yes	Year effects are extracted by LSmeans	Year effect is the aggregated mean of predictions by year	Yes	Model 1; year effect is the aggregated mean of predictions by year; CV in Table 2
(10) Plot nominal and standardized CPUEs over time.	Yes (WP08, Fig.5)	Yes, Table 1	Fig. 6	Yes (see Fig 10, Tables 2,3)	Fig. 6
Note for revision of index	Up to 2016	Will be available up to 2017 in next TWG	Will be available up to 2016 in next TWG	Will be available up to 2017 in next TWG (upon domestic consultation)	No revision
Reference	NPFC-2017-TWG PSSA02-WP08	NPFC-2017-TWG PSSA02-WP06	NPFC-2017-TWG PSSA01-WP03	NPFC-2017-TWG PSSA02-WP02	NPFC-2017-TWG PSSA02-WP03

*Sakai et al. 2017 NPFC-2017-TWG PSSA01-WP01

Annex

Data availability on size composition and catch/CPUE for Pacific saury

Length composition	China	Japan	Korea	Russia	Chinese Taipei	Vanuatu
Size category	1cm bin	a) Com fish: 1cm bin b) Survey: 1cm bin	a) Catch by size group (3 classes) b) 1cm	a) Catch by size group (3 classes) b) Catch by size group (5 classes) c) 1cm	a) Catch by size group (5 classes) b) Catch by size group (6 classes) c) 1cm	a) Catch by size group (5 classes)? b) Catch by size group (6 classes)?
Period of data	2013-	a) 1950- b) 2003-	a) 2001-2015 b) 2001-	a) 1956- b) 1960- c) 2003-	a) 2001-2008 b) 2009- c) 2006-	To be checked
Sampling fraction	little	a) 5,000 (/yr) b) 100 (/sampling station)	a) 20-100%* b) a little	a), b), c) sample size 3,700-56,700	a), b) 100%* c) sample size 360-400 (/yr)	To be checked
Spatial coverage	Fishing grounds in CA	a) mostly in NW b) Lat 38-48N & Long 143E-165W	a),b) Fishing grounds in CA	a), b), c) Mostly in fishing grounds in Russian EEZ	a), b), c) Fishing area in CA	To be checked
Temporal coverage	By month (Aug-Oct)	a) by day (Aug-Dec) b) by sampling occasion (Jun)	a),b) By month in fishing season (May-Dec)	a), b) by year c) by month (Aug-Nov)	a), b) by month (Jun-Dec) c) by month (Oct-Nov)	To be checked
Comment			*from log book		*from log book	
Catch/CPUE	China	Japan	Korea	Russia	Chinese Taipei	Vanuatu
Spatial coverage	By 1-deg grid in CA	NW and CA (1-deg grid)	By 1-deg grid in CA	NW and CA (1-deg grid)	By 1-deg grid in CA	By 1-deg grid in CA?
Temporal coverage	By month (Aug-Dec)	By month (Aug-Dec)	By month (May-Dec)	By month (Aug-Nov)	By month (Jun-Dec)	By month (Aug-Nov)?

NPFC/FAO Workshop

Protection of Vulnerable Marine Ecosystems in the North Pacific Fisheries Commission Area: applying global experiences to regional assessments

12-15 March 2018

Yokohama, Japan

Workshop Report

NPFC/FAO Workshop
Protection of Vulnerable Marine Ecosystems in the North Pacific Fisheries Commission Area: applying global experiences to regional assessments

AGENDA

Agenda Item 1. Opening of the Workshop
- 1.1 Welcome Address
- 1.2 Purpose of Workshop and Expectations

Agenda Item 2. International Obligations for Assessment of Significant Adverse Impacts (SAIs) on Vulnerable Marine Ecosystems (VMEs)

Agenda Item 3. Overview of Seamount Bottom Fisheries Situations and Potential Impacts on Corals

Agenda Item 4. Global Overview of Actions Taken to Prevent SAI on VMEs
- 4.1 Surveys and VME Identification
- 4.2 VME Encounter Protocols
- 4.3 Exploratory Fishing Protocols
- 4.4 Spatial management strategies

Agenda Item 5. Historical SAI Assessments of NPFC Members (primarily from 2008-2009)

Agenda Item 6. Protection of Corals and VMEs in Fished and Unfished Areas

Agenda Item 7. Reports on Current SAI Assessments
- 7.1 Northeastern Pacific Ocean
- 7.2 Northwestern Pacific Ocean

Agenda Item 8. Global Overview Paper on Data Requirements to Implement Deep Sea Fisheries Measures to Protect VMEs

Agenda Item 9. Reports of the Members on Data Availability and Deficiencies

Agenda Item 10. The Global Picture - Discussions on Comparisons of the NPFC Approach with That of Other Regions (including data needs)

10.1 Surveys and VME Identification

10.2 Bottom Fishing Footprints (including monitoring gear and effort changes)

10.3 VME Encounter Protocols

10.4 Exploratory Fishing Protocols

10.5 Spatial management measures

Agenda Item 11. Discussions on Future Options for NPFC to Prevent SAI on VMEs

11.1 Data and Data Gaps

11.2 Encounter Protocols

11.3 SAI Assessments

11.4 Fishing Footprints and Exploratory Fishing Protocols

11.5 Spatial management measures

Agenda Item 12. Concluding Remarks on Major Findings of the Workshop

Agenda Item 13. Recommendations to the SSC VME

Agenda Item 14. Adoption of the Report

Agenda Item 15. Close of the Workshop

WORKSHOP REPORT

Agenda Item 1. Opening of Workshop

1. The NPFC/FAO workshop on *protection of vulnerable marine ecosystems in the North Pacific Fisheries Commission (NPFC) Area: applying global experiences to regional assessments* (NPFC/FAO VME workshop) took place in Yokohama, Japan, on 12-15 March 2018 at the National Research Institute of Fisheries Science (NRIFS), Japan Fisheries Research and Education Agency (FRA). The workshop was sponsored and organized by the NPFC and the Food and Agriculture Organization of the United Nation's (FAO) Areas Beyond National Jurisdiction Program (ABNJ). It was also co-sponsored by the North Pacific Marine Science Organization (PICES). The workshop was attended by Members from Canada, China, Japan, the Republic of Korea, Russia, and the United States. Other participants were representatives and invited experts from Australia, New Zealand, the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), the Deep Sea Conservation Coalition (DSCC), FAO, PICES, and the South Pacific Regional Fisheries Management Organization (SPRFMO).

1.1 Welcome Address

2. The Executive Secretary of the NPFC, Dr. Dae-Yeon Moon, welcomed the participants to the workshop. He extended his gratitude to the Government of Japan for hosting the workshop, and to FAO for initiating and supporting it. He also expressed his hope that the workshop would contribute to further protection of vulnerable marine ecosystems (VMEs).

3. Dr. Hassan Moustahfid (FAO) provided an overview of FAO's ABNJ Deep Seas Project and its Deep-seas Fisheries Programme.

1.2 Purpose of Workshop and Expectations

4. The Co-Chairs, Dr. Masashi Kiyota (Japan) and Dr. Loh-Lee Low, outlined the purposes of the workshop, key issues, and expected tasks and outputs from it.

Agenda Item 2. International Obligations for Assessment of Significant Adverse Impacts (SAIs) on Vulnerable Marine Ecosystems (VMEs)

5. Dr. Tony Thompson (FAO) presented an overview of the international obligations for assessment of significant adverse impacts (SAIs) on VMEs and global legal frameworks related to the definition, conservation, management, and impact assessment of VMEs (NPFC-2018-WS VME01-WP12).
   (SEAFO), the Southern Indian Ocean Fisheries Agreement (SIOFA), and SPRFMO) (NPFC-2018-WS VME01-WP02).

Agenda Item 3. Overview of Seamount Bottom Fisheries Situations and Potential Impacts on Corals

6. Dr. Ellen Kenchington (Canada), on behalf of Dr. Odd Aksel Bergstad (Norway), presented an outline of global seamount bottom fisheries and impacts, covering definitions, history of fisheries, and experiences from the Atlantic ABNJ and regional fisheries management organizations (RFMOs) (NPFC-2018-WS VME01-WP09).

Agenda Item 4. Global Overview of Actions Taken to Prevent SAI on VMEs

4.1 Surveys and VME Identification

7. Dr. Kenchington presented the global overview of actions taken to prevent SAI on VMEs with the emphasis on surveys and VME identification in the Canadian EEZ and Northwest Atlantic Fisheries Organization (NAFO) Convention Area (NPFC-2018-WS VME01-WP10).

8. Dr. Tatiana Dautova (Russia) presented research on VMEs in the Northwestern Pacific as life-supporting resources and VME identification, with a focus on octocorallia (NPFC-2018-WS VME01-WP07).

9. Dr. Amy Baco-Taylor (USA), via webex, presented observations of benthic megafauna on actively fished Hawaiian Ridge and Emperor Seamounts with comparison to seamounts with recovering coral populations (NPFC-2018-WS VME01-IP02).

10. Dr. Robert Stone (USA) presented on VMEs in the North Pacific, highlighting their characteristics and ecological importance, ongoing research, and future research needs (NPFC-2018-WS VME01-WP17).

4.2 VME Encounter Protocols

11. Dr. Kiyota presented a comparison of the VME indicators, encounter thresholds, move-on rules, and post-encounter treatment of various RFMOs (CCAMLR, NAFO, the North East Atlantic Fisheries Commission (NEAFC), NPFC, the South East Atlantic Fisheries Organization (SEAFO), the Southern Indian Ocean Fisheries Agreement (SIOFA), and SPRFMO) (NPFC-2018-WS VME01-WP02).

4.3 Exploratory Fishing Protocols

12. Dr. Dirk Welsford (Australia/CCAMLR) presented CCAMLR's experience in developing and implementing management measures, particularly exploratory fishing protocols (NPFC-2018-WS VME01-WP14).

4.4 Spatial Management Strategies

13. Dr. Ashley Rowden and Dr. Martin Cryer (New Zealand/SPRFMO) presented New Zealand's experience within SPRFMO of developing spatial management strategies, including the underlying research and gaining the acceptance of stakeholders (NPFC-2018-WS VME01-WP16).

Agenda Item 5. Historical SAI Assessments of NPFC Members (primarily from 2008-2009)

14. Dr. Low presented Members' historical SAI assessments, and measures taken voluntarily by the Contracting Parties during the negotiation period and later adopted by the NPFC (NPFC-2018-WS VME01-WP06).

Agenda Item 6. Protection of Corals and VMEs in Fished and Unfished Areas

15. Dr. Chris Rooper (USA/PICES) presented on the management of VMEs in US waters, focusing on species distribution modelling in Alaska (Aleutian Islands, Gulf of Alaska, Eastern Bering Sea) and the wider North Pacific (NPFC-2018-WS VME01-WP08), and identified how these tools can be used to protect VMEs from mobile bottom contact gear.

Agenda Item 7. Reports on Current SAI Assessments

7.1 Northeastern Pacific Ocean

16. Dr. Cherisse Du Preez (Canada) reported on the updated SAI assessment of Canada's bottom fisheries in the Northeastern Pacific Ocean (NPFC-2018-WS VME01-WP15). Canada fishes in four seamount aggregations in the Convention Area, comprised of eight seamounts, targeting Sablefish with longline traps. The fishing effort is relatively low, with a maximum of six vessels per year drawn from a lottery system (e.g. one vessel per month is authorized to fish between April and September inclusive). It is also possible that no vessels fish in the Convention Area in a given year. The current Canadian fishery does not pose any known conservation concern to Sablefish populations. Since fishing grounds overlap with the known or predicted distribution of several VME indicator taxa (including corals, glass sponges and hydrocorals), impact by the seamount fisheries is considered likely, although small, given low effort.

Although Canada is the only NPFC Member currently fishing the Northeastern Pacific seamounts, commercial fishing activities on these seamounts began in the 1970s with multiple nations known to have fished using bottom-contact and mid-water trawl, bottom long-line hook and trap, and gillnet gear.

7.2 Northwestern Pacific Ocean

17. Dr. Kiyota reported on the updated SAI assessment for Japan's bottom fisheries in the Northwestern Pacific Ocean (NPFC-2018-WS VME01-WP01, 03, 04, 05; IP01). Japan currently operates three trawlers and one gillnet vessel in the southern Emperor Seamounts. The primary and secondary target species are North Pacific armorhead and splendid alfonsino, respectively. Based on a fine-scale analysis of spatial overlap between fishing activities and benthic taxa, and by the VME criteria specified in NPFC CMM 2017-05, Japan identified two VME sites on the outer margins of the main fishing grounds. Japan suggests that it is possible to avoid SAIs on fished seamounts through spatial protection of identified VMEs, supplemented by improvement of encounter protocols. Japan also recommends refining exploratory fishing protocols for unfished areas.

18. Dr. Eunjung Kim (Korea) reported on the updated SAI of Korea's bottom fisheries in the Northwestern Pacific Ocean (NPFC-2018-WS VME01-WP11). Since 2015, only one trawler has been operating in the Convention Area, targeting North Pacific armorhead and splendid alfonsino. The average number of fishing days from 2015 to 2017 was 65. The main fishing months were March to May. Korea lacks VME specialists and equipment, and relies on VME indicator taxa bycatch data collected by on-board scientific observers. However, the ability of observers may result in bias in the data and Korea has therefore proposed that the NPFC create a VME field guide. Korea also believes in the importance of data sharing for mapping VME species for further work.

19. Based on the presentations, the participants discussed the status of SAI assessments on VMEs in the Convention Area, noting the following:
    a. It would be desirable to develop a standardized approach to assess the cumulative impact of all Members' fisheries together, and care should be taken when drawing conclusions from individual assessments;
    b. There remains significant uncertainty over SAI in the Convention Area; however, participants generally agreed that SAI took place in the past, and that the impact is likely to be occurring in the fished areas as fishing continues;
    c. The encounter protocols may need to be modified to address the fact that Scleractinian coral are not appearing in bycatch in areas where they are known to exist;

d. It would be desirable for the NPFC to set measurable objectives for determining the occurrence of SAI;
e. In terms of the scope of SAI assessment, it is appropriate to focus on a smaller scale in areas where fishing is occurring, while also taking into account the broader ecosystem;
f. It is worthwhile considering the assessment and protection of degraded and recovering VME sites, in addition to pristine VME sites.

Agenda Item 8. Global Overview Paper on Data Requirements to Implement Deep Sea Fisheries Measures to Protect VMEs

20. The participants discussed data availability and progress in VME protection in the NPFC, while referencing the data requirements set out in the FAO Deep-Sea Fisheries Guidelines. A summary of the information with comments is presented in NPFC-2018-WS VME01-WP20. The participants pointed out the following:
    a. There is a need for combined and collaborative monitoring, and cooperative research programs;
    b. There is a need for a regional NPFC observer program. This would be particularly important for the Emperor Seamount area;
    c. It would be useful to have observer training and coordinate training programs to support the NPFC observer program;
    d. The participants support the ongoing work of the NPFC to create a regional coral identification field guide;
    e. It would be useful to hold a workshop on conducting joint species distribution maping research;
    f. It would be desirable to refine the mapping of the fishing footprint to incorporate effort and gear information;
    g. Documentation of the types of gear used in fisheries would be useful for understanding the impact of historical and existing bottom fishing;
    h. It would be useful to develop approaches to monitor time/space changes in VMEs.

Agenda Item 9. Reports of the Members on Data Availability and Deficiencies

21. Dr. Du Preez presented a report of Canada's data availability and deficiencies (NPFC-2018-WS VME01-WP18). All Canadian vessels are required to have 100% at-sea monitoring either through independent observers or electronic monitoring. Fishing event data includes location, time, date, depth, gear configuration, and how the catch was handled (retained, released, etc.). There is 100% dockside monitoring of fisheries for landed catch, which is identified by species and weight. Lost gear is recorded but effort to retrieve lost gear is not recorded. Long-line gear does not retain sessile organism bycatch well. Indices of abundance of bycatch species are not

currently available for the offshore southern seamount fishery. Canada has conducted visual surveys and collected much scientific data for the Cobb Seamount and seamounts within the Canadian EEZ, but has conducted little to no visual surveys for the other seamounts in the Convention Area.

22. Dr. Kiyota presented a report of Japan's data availability and deficiencies (NPFC-2018-WS VME01-WP19). Commercial fishery data showing catch and effort is obtained from logbooks. Data sets are complete from the 1990s onwards but incomplete before that. VMS (Vessel Monitoring System) data exists but is not available for scientific analysis due to confidentiality issues. Scientific observer data and samples have been collected from 2009 based on the format set out in NPFC CMM 2017-05. Japan has been conducting annual scientific seamount surveys since 2006. It is also conducting multibeam echosounder surveys for fine-scale bathymetry.

23. Dr. Kim presented a report of Korea's data availability and deficiencies. Commercial fisheries data is obtained from logbooks. An electronic logbook system was started in 2015. VME bycatch data is not yet reported but was added to the electronic logbook system in 2017. All Korean vessels have scientific observers who collect bycatch data and biological samples, including samples of VME species.

Agenda Item 10. The Global Picture – Discussions on Comparisons of the NPFC Approach with That of Other Regions (including data needs)

10.1 Surveys and VME Identification

24. Dr. Stone and Dr. Du Preez led a discussion on surveys and VME identification. With regard to surveys, the participants discussed their value, challenges, technology options, and the potential for collaboration. Concerning field guides, the participants discussed taxonomic resolution, the need to balance scientific and functional information, the need to ensure consistency across Members' field guides, and other sources of data worth considering (e.g., video from cameras deployed on fishing gear).

10.2 Bottom Fishing Footprints (including monitoring gear and effort changes)

25. Dr. Kenchington led a discussion on bottom fishing footprints. The participants discussed practical data collection issues, the potential of interactive apps for data collection and sharing, benefits of VMS for fine tuning the fishing footprints and establishment of spatial management mechanisms, data confidentiality issues, the importance of assessing the combined fishing footprint and cumulative impact, the value of optimization routines for conservation and management objectives conducted by SPRFMO, and gear modifications and fishing procedures that could reduce impact on the sea bottom.

10.3 VME Encounter Protocols

26. Dr. Kiyota led a discussion on VME encounter protocols. The participants discussed the potential need for different protocols for the eastern and western parts of the Convention Area, and for fished and unfished areas; encounters occurring from exploratory fisheries; gear-specific and species-specific thresholds; ways to improve the accuracy of thresholds; move-on rules; temporary closures; and the importance of immediate notification of an encounter to other Members to avoid multiple encounters on the same VME.

10.4 Exploratory Fishing Protocols

27. Dr. Welsford led a discussion on exploratory fishing protocols. The participants discussed the approaches of different RFMOs, the potential need to distinguish between research and non-research vessels, the potential value of sharing information obtained from exploratory fisheries, and the importance of ensuring that there are no loopholes in protocols that can be exploited.

10.5 Spatial management measures

28. Dr. Rowden led a discussion on spatial management measures. The participants discussed the need to assess the cumulative impact of Members' fishing, the usefulness of habitat suitability modeling, the value of collating data from all Members, data confidentiality issues, the value of fisheries independent data, the value of a formal stakeholder process, the usefulness of decision-support tools, the importance of periodic review, and the status of recovering VME areas on fished seamounts.

Agenda Item 11. Discussions on Future Options for NPFC to Prevent SAI on VMEs:

11.1 Data and Data Gaps

11.2 Encounter Protocols

11.3 SAI Assessments

11.4 Fishing Footprints and Exploratory Fishing Protocols

11.5 Spatial management measures

29. The participants discussed future options for the NPFC to prevent SAI on VMEs and compiled recommendations, as presented in Agenda Item 13, below.

Agenda Item 12. Concluding Remarks on Major Findings of the Workshop

30. The Co-Chairs and the Science Manager thanked the participants for their fruitful discussions, which will be invaluable to the NPFC. They also commended the great spirit of cooperation exhibited by all participants.

Agenda Item 13. Recommendations to the SSC VME

31. The following recommendations were made:

DATA

a. Review data availability against data requirements from the FAO DSF Guidelines (NPFC-2018-WS VME01-WP20), clarify data deficiencies and prioritize actions to fill data gaps;
b. Cooperate with TCC in getting information on vessel positions to develop scientific advice on fine scale spatial management in the Emperor Seamount area;
c. Continue development of the regional observer program and address the issue of observer data sharing;
d. Consider conducting standardized training programs for observers with support from FAO;
e. Continue work on the ID guides for VME indicators;
f. Consolidate all available data including bycatch, scientific surveys, fisheries independent surveys, historical literature, from fishing industry itself (e.g., bathymetric data), and potentially relevant information from within EEZs, to get more detailed information about interactions between VMEs and bottom fisheries, including coral drag fishing;
g. Collect and make use of additional data relevant to protection of VMEs including data on potential impacts of climate change and lost fishing gear;
h. Establish data sharing protocols which consider privacy issues to collate all data across Members;
i. Create a central data repository for the NPFC and ensure data security;

ENCOUNTER PROTOCOL

j. VME indicator taxa – Develop area-specific indicators with regional characteristics of benthic fauna taken into account, and choose proper taxonomic resolution that will represent the ecological function of the indicator groups taking the balance of practicality and scientific validity;
k. Encounter threshold – Refine the current thresholds on the basis of scientific information including bycatch levels and catchability estimates, and use taxon-specific and gear-specific thresholds;
l. Move-on rule – Albeit the change from 5 nm to 2 nm appears reasonable, consider refining the move-on distance in relation to the size and distribution of observed VME patches, as well as the size of fishable seamounts;
m. Post-encounter requirements – Prepare a quick reporting protocol to avoid multiple impacts on the same VME site, and consider a process to introduce provisional area-protection around the encounter location, for example, a box with a set distance around the tow path;

SAI ASSESSMENTS

n. Assess SAI by bottom fisheries on any other relevant VME indicator taxa, in addition to the four existing taxa, for example sponges and hydrocorals where they are found in the Convention Area;
o. Develop a standardized approach and metrics to assess the cumulative impact of all Members' bottom fisheries on VMEs through time;
p. Develop measurable objectives for determining the occurrence of SAI;
q. Assess the recovery of VME sites and protect recovering sites in addition to pristine VME sites; monitor the recovery process;

FISHING FOOTPRINTS

r. Map a combined fishing footprint and effort to better identify fishing grounds using data from all NPFC Members by gear type and time;
s. Determine the appropriate scale for collecting and identifying fishing locations to define the fishing footprint in relation to assessing SAI;
t. Consider methods for accessing electronic data from the fishing vessels operating in the NPFC and from any research vessels, and encourage Members to deploy electronic reporting systems whenever possible including data on position and catch;
u. Provide descriptions of the current and historical fishing gears operating in the NPFC;

EXPLORATORY FISHING PROTOCOL

v. Consider the following points with respect to avoiding SAIs to VMEs in the course of exploratory fishing:
    i. Conduct reconnaissance for VME in the area to be explored, through fishery-independent surveys, drop-camera deployments from fishing vessels or other low impact sampling prior to fishing, beyond the requirements currently contained in the NPFC regulations;
    ii. Initial exploratory fishing trips should be short to allow for timely assessment of both VME and fishery but at the same time minimizing any SAI;
w. Consider banning exploratory fishing in VME closed areas;
x. Clarify the role of observers in collecting and reporting data during exploratory fishing;
y. Review the application of the exploratory fishery measure to learn from others' experiences in implementing their exploratory fisheries measures;

SPATIAL MANAGEMENT MEASURES

z. Assess management needs and decide on objectives that are aligned with the UNGA resolutions and NPFC convention;

aa. Use spatial mitigation measures that could include gear-specific closures, full-seamount closures, and within-seamount closures (on large seamounts with fine-scale spatial information and if practically possible);
bb. Develop habitat suitability models and use them with decision-support tools to aid a formal spatial management planning process, as used in SPRFMO;
cc. Introduce periodic review process (enables flexibility to change needs and objectives of spatial management, as well as availability of new data to re-test results of analysis and decisions on which they are based);

GENERAL

dd. Introduce periodic internal review processes for VME management;
ee. Consider external reviews to audit RFMO performance on VME protection;
ff. Conduct annual pre-reporting of research plans between Members to facilitate collaboration;
gg. Seek cooperation with other organizations which have related missions.

Agenda Item 14. Adoption of the Report

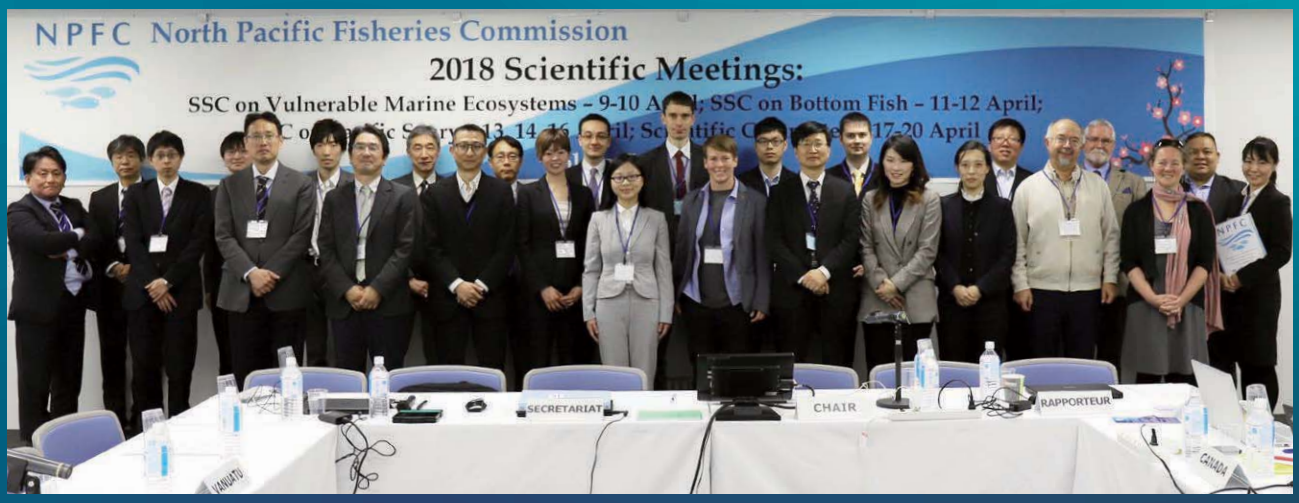
32. The Workshop Report was adopted by participants.

Agenda Item 15. Close of the Workshop

33. The Workshop closed at 16:22 on 15 March 2018.

3rd Meeting of the Small Scientific Committee on Vulnerable Marine Ecosystems

9-10 April 2018
Tokyo, Japan
Meeting Report



3rd Meeting of the Small Scientific Committee on Vulnerable Marine Ecosystems

AGENDA

Agenda Item 1. Opening of the meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Meeting arrangements

Agenda Item 4. Member's research activities on VMEs

Agenda Item 5. Review of outputs and recommendations from the NPFC/FAO VME workshop

Agenda Item 6. Review of the CMMs 2017-05 and 2017-06 for bottom fisheries and protection of vulnerable marine ecosystems

Agenda Item 7. Scientific projects
- 7.1 Ongoing projects
  - 7.1.1 Spatial management of VMEs and bottom fisheries
  - 7.1.2 VME identification guide
- 7.2 New projects

Agenda Item 8. Review/update of the 2017-2021 Work Plan

Agenda Item 9. Other matters
- 9.1 Liaison with other organizations
- 9.2 Other issues

Agenda Item 10. Recommendations to the Scientific Committee

Agenda Item 11. Next meeting

Agenda Item 12. Adoption of the Report

Agenda Item 13. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the meeting

1. The 3rd Meeting of the Small Scientific Committee on Vulnerable Marine Ecosystems (SSC VME) took place in Tokyo, Japan on 9-10 April 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, and the Russian Federation. The Deep Sea Conservation Coalition (DSCC) attended as an observer. The meeting was opened by Ms. Bai Li (China) who served as the SSC VME Chair.

Agenda Item 2. Adoption of Agenda

2. The agenda was adopted without revision.

Agenda Item 3. Meeting arrangements

3. Science Manager Dr. Aleksandr Zavolokin outlined the meeting arrangements.

Agenda Item 4. Member's research activities on VMEs

4. Japan reported on its scientific survey on the bottom environment in the southern Emperor Seamounts (NPFC-2018-SSC VME03-WP01). From 11 July to 9 August 2017, Japan conducted drop-camera surveys at 18 stations in the C-H Seamount, ranging from 347 m to 1,235 m in depth. The results were compared to those of Japanese surveys conducted at similar stations in 2010-2012 and 2016. Fish, including main target species such as North Pacific armorhead and oxeye oreo, were observed at almost all stations, and changes in species composition and an increase in the occurrence of benthos were confirmed on the sea floor. A change in the bottom environment was thus observed.

5. Russia suggested that the accuracy of species identification could be improved through sampling. Japan acknowledged the difficulty of accurately identifying species through camera and video footage alone.

6. Russia reported on identification of VMEs and assessment of the impact by bottom fishing activities on VMEs and marine species (NPFC-2018-SSC VME03-WP03). Russia has historically conducted bottom trawl fishing, bottom gillnet fishing, bottom longline fishing and pot fishing in the Emperor Seamounts. Russia complies with CMM 2017-05 when conducting bottom fishing activities in the Emperor Seamounts, and has not observed any evidence of SAIs on VMEs in the activities conducted to date.

7. Korea presented research conducted by Korea and the United States on primnoidae in the Emperor Seamounts (NPFC-2018-SSC VME03-IP01). Coral specimens were collected by observers on Korean trawl vessels and analyzed. Six primnoid species, including two new species, were identified.

8. Canada presented an overview of its research activities on VMEs, particularly research conducted on Cobb Seamount (NPFC-2018-SSC VME03-IP03).

Agenda Item 5. Review of outputs and recommendations from the NPFC/FAO VME workshop

9. The Co-Chair of the NPFC/FAO VME workshop, Dr. Masashi Kiyota, summarized the outputs of the workshop and presented recommendations for the consideration of the SSC VME (NPFC-2018-WS VME01-Final Report; NPFC-2018-SSC VME03-IP02).

10. The SSC VME reviewed and refined the recommendations submitted by the NPFC/FAO VME workshop, including determining the level of priority of each recommendation, as detailed in the Annex. The participants agreed to review the recommendations from the workshop again in the future.

Agenda Item 6. Review of the CMMs 2017-05 and 2017-06 for bottom fisheries and protection of vulnerable marine ecosystems

11. The participants reviewed CMMs 2017-05 and 2017-06 and determined that it is not necessary to revise them at this point in time.

Agenda Item 7. Scientific projects

7.1 Ongoing projects

7.1.1 Spatial management of VMEs and bottom fisheries

12. The Data Coordinator, Mr. Mervin Ogawa, reported on discussions with the Secretariat of the Commission for the Conservation of Antarctic Marine Living Resources on the development and management of the spatial database (NPFC-2018-SSC VME03-WP02).

13. The participants agreed to establish an informal small working group (Canada, China, Japan, Korea, Russia) that will work intersessionally to provide suggestions to the Data Coordinator for spatial management project.

7.1.2 VME identification guide

14. Korea reported on the progress in the development of the NPFC VME identification guide.

15. Canada, Japan and Korea drafted a list of tasks for the development of the NPFC VME identification guide, for inclusion in the 2017-2021 Work Plan.

16. The participants agreed to establish an informal small working group (Canada, China, Japan, Korea, Russia) that will work intersessionally to develop a VME identification guide.

7.2 New projects

17. The participants discussed potential new projects and proposed holding a face-to-face meeting to discuss data requirements and data sharing for combined SAI assessment and other VME-related tasks.

Agenda Item 8. Review/update of the 2017-2021 Work Plan

18. The participants reviewed the 2017-2021 Work Plan and updated it as detailed in NPFC-2018-SC03-WP07.

Agenda Item 9. Other matters

9.1 Liaison with other organizations

19. The Chair reported on her attendance of a climate change and fisheries workshop co-organized by the Food and Agriculture Organization of the United Nations (FAO) and the Deep Ocean Stewardship Initiative (DOSI). Research highlights from the workshop include studies of the various impacts of climate change on the deep ocean, the application of habitat suitability models, and exposure to climate change hazards. The Chair emphasized that liaison with other organizations could provide future research ideas for the NPFC, and encouraged Members to attend conferences hosted by other organizations.

9.2 Other issues

20. No other issues were discussed.

Agenda Item 10. Recommendations to the Scientific Committee

21. The SSC VME recommends the following to the SC:

a. Endorse the recommendations from the NPFC/FAO VME Workshop as revised by the SSC VME in the Annex, and adopt the following recommendations (b. - n.) as high priority tasks for the SSC VME. Tasks identified as second priorities will be updated annually as part of the Work Plan.

Data

b. Review data availability against data requirements from the FAO DSF Guidelines (NPFC-2018-WS VME01-WP20), clarify data deficiencies and prioritize actions to fill data gaps.

c. Continue development of the regional observer program.

d. Consolidate all available data and potentially relevant information from inside and outside the Convention Area to map VMEs (such as bycatch, scientific surveys and ecological models, fisheries independent surveys, historical literature, data from fishing industry itself, coral drag fishing).

e. Continue work on the identification guides for VME indicators, data sharing protocols, and central data repository for the NPFC.

Encounter Protocol

f. Post-encounter requirements – Prepare a quick reporting protocol to avoid multiple impacts on the same VME site, and consider a process to introduce provisional area-protection around the encounter location, for example, a box with a set distance around the tow path.

SAI Assessments

g. Assess SAI by bottom fisheries on any other relevant VME indicator taxa, in addition to the four existing taxa (for example sponges and hydrocorals) and choose taxonomic resolution for VME indicators.

h. Develop measurable objectives for determining the occurrence of SAI and a standardized approach and metrics to assess the cumulative impact of all Members' bottom fisheries on VMEs through time.

Fishing Footprints

i. Map a combined fishing footprint and effort to better identify fishing grounds using data from all NPFC Members by gear type and time.

j. Determine the appropriate scale for collecting and identifying fishing locations to define the fishing footprint in relation to assessing SAI.

Exploratory Fishing Protocol

k. Consider the following points with respect to avoiding SAIs to VMEs in the course of exploratory fishing:

i. Review available scientific information (such as distribution models) and conduct reconnaissance for VME in the area to be explored, through fishery-independent surveys,

drop-camera deployments from fishing vessels or other low impact sampling prior to fishing, beyond the requirements currently contained in the NPFC regulations.

ii. Initial exploratory fishing trips should be short to allow for timely assessment of both VME and fishery but at the same time minimizing any SAI.

Spatial Management Measures

l. Develop management objectives and appropriate measures to protect recovering VME sites.

Other

m. Assess the recovery of VME sites and monitor the recovery process.

n. Introduce periodic internal review processes for VME management.

o. Endorse the updated 2017-2021 SSC VME Work Plan (NPFC-2018-SC03-WP07) which summarizes the recommendations above.

p. Endorse the updated list of projects from the SSC VME as detailed in NPFC-2018-SC03-WP08.

q. Maintain the wording of the VME-related sections of CMM 2017-05 and CMM 2017-06.

Agenda Item 11. Next meeting

22. The SSC VME requests the guidance of the SC for determining the date and location of the next meeting.

Agenda Item 12. Adoption of the Report

23. The SSC VME03 Report was adopted by consensus.

Agenda Item 13. Close of the Meeting

24. The SSC VME03 closed at 17:16 on 10 April 2018.

Annex

Prioritized list of recommendations from the NPFC/FAO VME workshop

Annex

Prioritized list of recommendations from the NPFC/FAO VME workshop

#	Recommendation	Priority	
		High	Second
	Data		
1	Review data availability against data requirements from the FAO DSF Guidelines (NPFC-2018-WS VME01-WP20), clarify data deficiencies and prioritize actions to fill data gaps	v	
2	Continue development of the regional observer program	v	
3	Consolidate all available data including bycatch, scientific surveys, fisheries independent surveys, historical literature, from fishing industry itself (e.g., bathymetric data), and potentially relevant information, to map VMEs and get more detailed information about interactions between VMEs and bottom fisheries, including coral drag fishing	v	
4	Continue work on the ID guides for VME indicators; data sharing protocols; and central data repository for the NPFC and ensure data security	v	
5	Cooperate with TCC in getting information on vessel positions to develop scientific advice on fine scale spatial management in the Emperor Seamount area		v
6	Consider conducting standardized training programs for observers with support from FAO		v
7	Collect and make use of additional data relevant to protection of VMEs including data on potential impacts of climate change and lost fishing gear		v
	Encounter Protocol		
8	Post-encounter requirements – Prepare a quick reporting protocol to avoid multiple impacts on the same VME site, and consider a process to introduce provisional area-protection around the encounter location, for example, a box with a set distance around the tow path	v	
9	VME indicator taxa – Develop area-specific indicators with regional characteristics of benthic fauna taken into account, and choose proper taxonomic resolution that will represent the ecological function of the indicator groups taking the balance of practicality and scientific validity		v
10	Encounter threshold – Refine the current thresholds on the basis of scientific information including bycatch levels and catchability estimates, and use taxon-specific and gear-specific thresholds		v
11	Move-on rule – Albeit the change from 5 nm to 2 nm appears reasonable, consider refining the move-on distance in relation to the size and distribution of observed VME patches, as well as the size of fishable seamounts		v
	SAI Assessments		
12	Assess SAI by bottom fisheries on any other relevant VME indicator taxa, in addition to the four existing taxa, for example sponges and hydrocorals where they are found in the Convention Area	v	
13	Develop a standardized approach and metrics to assess the cumulative impact of all Members' bottom fisheries on VMEs through time	v	
14	Develop measurable objectives for determining the occurrence of SAI	v	

	Fishing Footprints		
15	Map a combined fishing footprint and effort to better identify fishing grounds using data from all NPFC Members by gear type and time	v	
16	Determine the appropriate scale for collecting and identifying fishing locations to define the fishing footprint in relation to assessing SAI	v	
17	Consider methods for accessing electronic data from the fishing vessels operating in the NPFC and from any research vessels, and encourage Members to deploy electronic reporting systems whenever possible including data on position and catch		v
18	Provide descriptions of the current and historical fishing gears operating in the NPFC		v
	Exploratory Fishing Protocol		
19	Consider the following points with respect to avoiding SAIs to VMEs in the course of exploratory fishing	v	
	i. Conduct reconnaissance for VME in the area to be explored, through fishery-independent surveys, drop-camera deployments from fishing vessels or other low impact sampling prior to fishing, beyond the requirements currently contained in the NPFC regulations	v	
	ii. Initial exploratory fishing trips should be short to allow for timely assessment of both VME and fishery but at the same time minimizing any SAI	v	
	iii. Consider banning exploratory fishing in VME closed areas		v
20	Clarify the role of observers in collecting and reporting data during exploratory fishing		v
21	Review the application of the exploratory fishery measure to learn from others' experiences in implementing their exploratory fisheries measures		v
	Spatial Management Measures		
22	Develop management objectives and appropriate measures to protect recovering VME sites	v	
23	Assess management needs and decide on objectives that are aligned with the UNGA resolutions and NPFC convention		v
24	Use spatial mitigation measures that could include gear-specific closures, full-seamount closures, and within-seamount closures (on large seamounts with fine-scale spatial information and if practically possible)		v
25	Develop habitat suitability models and use them with decision-support tools to aid a formal spatial management planning process, as used in SPRFMO		v
26	Introduce periodic review process (enables flexibility to change needs and objectives of spatial management, as well as availability of new data to re-test results of analysis and decisions on which they are based)		v
	Other		
27	Assess the recovery of VME sites and monitor the recovery process	v	
	General		
28	Introduce periodic internal review processes for VME management	v	
29	Consider external reviews to audit RFMO performance on VME protection		v
30	Conduct annual pre-reporting of research plans between Members to facilitate collaboration		v
31	Seek cooperation with other organizations which have related missions		v

1st Meeting of the Small Scientific Committee on Bottom Fish

11-12 April 2018
Tokyo, Japan
Meeting Report

1st Meeting of the Small Scientific Committee on Bottom Fish

AGENDA

Agenda Item 1. Opening of the meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Meeting arrangements

Agenda Item 4. Review of Member's bottom fisheries and research activities

Agenda Item 5. Progress in stock assessments of bottom fish and development of adaptive management process and harvest control rules for North Pacific Armorhead

Agenda Item 6. Data collection and reporting
- 6.1 Observer data
- 6.2 Fisheries data

Agenda Item 7. Review of the CMMs 2017-05 and 2017-06 for bottom fisheries and protection of vulnerable marine ecosystems

Agenda Item 8. Review/update of the 2017-2021 Work Plan

Agenda Item 9. Scientific projects
- 9.1 Ongoing projects
  - 9.1.1 Spatial management of VMEs and bottom fisheries
- 9.2 New projects

Agenda Item 10. Other matters

Agenda Item 11. Recommendations to the Scientific Committee

Agenda Item 12. Next meeting

Agenda Item 13. Adoption of the Report

Agenda Item 14. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the meeting

1. The 1st Meeting of the Small Scientific Committee on Bottom Fish (SSC BF01) took place in Tokyo, Japan on 11-12 April 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, and the United States of America. The Deep Sea Conservation Coalition (DSCC) attended as an observer. The meeting was opened by Dr. Taro Ichii (Japan) who served as the SSC BF Chair.

Agenda Item 2. Adoption of Agenda

2. The agenda was adopted without revision.

Agenda Item 3. Meeting arrangements

3. Science Manager Dr. Aleksandr Zavolokin outlined the meeting arrangements.

Agenda Item 4. Review of Member's bottom fisheries and research activities

4. Russia reported on its bottom fishing activities in the Convention Area (NPFC-2018-AR-Annual Summary Footprint - Bottom Fisheries (Rev. 1)). Russia operated one longline vessel in 2017.

5. Korea reported on its bottom fishing activities in the Convention Area (NPFC-2018-AR-Annual Summary Footprint - Bottom Fisheries (Rev. 1)). Korea operated one bottom trawler in 2017. The total catch in 2017 is 309.3 tons, including both North Pacific armorhead and splendid alfonsino.

6. Japan reported on its bottom fishing activities in the Convention Area (NPFC-2018-AR-Annual Summary Footprint - Bottom Fisheries (Rev. 1)). Japan operated two trawlers and one gill net vessel. The total catch in 2017 is 314.1 tons for North Pacific armorhead, and 3,783.7 tons for splendid alfonsino. However, Japan has found misreporting in its trawl data and is reviewing the data from previous years. Japan will report the results of its review to the Technical and Compliance Committee.

7. The SSC BF01 concluded that the catch levels of North Pacific armorhead remain low and have been low since 2015.

8. Japan reported on its 2017 scientific survey in the Southern Emperor Seamounts area and acoustic data analysis (NPFC-2018-SSC BF01-WP04). From 2016 to 2017, Japan conducted scientific surveys for species identification via fishing, trawl and camera to understand the distribution of demersal fish on the Colahan and C-H Seamounts in the day and at night. Results for C-H Seamount show strong spatial patterns for the distribution of North Pacific armorhead and splendid alfonsino while results for the Colahan Seamount are not clear and Japan will further investigate the species composition there.

9. Korea presented the results of its analysis of molecular variance in the slender armorhead (North Pacific armorhead) from the Emperor Seamounts (NPFC-2018-SSC BF01-IP01). No significant genetic differentiation was found between the different seamount populations.

Agenda Item 5. Progress in stock assessments of bottom fish and development of adaptive management process and harvest control rules for North Pacific armorhead

10. Japan presented a review of biology and fisheries of splendid alfonsino, especially in the Emperor Seamounts area (NPFC-2018-SSC BF01-WP03). Japan concluded that catch- and CPUE-based stock assessments will be difficult because of uncertainty in catch reports and difficulty in using CPUE data. Therefore analyses such as yield-per-recruit or spawner-per-recruit may be more appropriate. Furthermore, small and arguably immature fish account for a large proportion of catch, especially in trawls. Analyses showed a significant reduction in the fork length of fish caught by Japanese trawlers between 2009 and 2016. Therefore life-history-based indicators to regulate size/age at capture can be useful. Further study on the life history of splendid alfonsino in the Convention Area is required, particularly reproduction patterns.

11. Japan presented a proposal for specifying the adaptive management processes for North Pacific armorhead and splendid alfonsino, following the five-year work plan of the 2017-2021 Research Plan of the Scientific Committee (SC) in the underlying scientific basis (NPFC-2018-SSC BF01-WP02 (Rev. 1)). For North Pacific armorhead, Japan proposed the following measures which depend on the strength of recruitment: (1) When the recruitment is low, NPA is basically not targeted and a catch limit for bycatch is set. The limit is set at approximately a half of the recent average catch. This principle for calculation is applied to all the Members

that are currently fishing North Pacific armorhead. (2) When the recruitment is strong, a half of the existing NPA fishing area will be closed. No catch limits are applied because it is difficult to specify an appropriate level of catch for the conservation of a half of the spawning stocks. This will be determined during the fishing season by a monitoring survey conducted by fishing vessels.

For splendid alfonsino, Japan proposed setting a minimum allowable mesh size (130 mm) for trawl nets to reduce fishing pressure on immature fish (fork length <25 cm; estimated age 2-3 years).

12. The SSC BF01 requested that Japan and Korea, as Members who fish North Pacific armorhead in the Convention Area, develop a more concrete monitoring survey plan and decision on management authority for the fishery, and present it to the 2019 meeting of the SSC BF or SC.

13. China suggested that Members who conduct the monitoring program provide a document that describes sampling plans and designs for the monitoring program with details, and also evaluate the performance of sampling designs on capturing recruitment condition of North Pacific armorhead.

14. Regarding splendid alfonsino, the SSC BF01 endorsed the setting of the minimum allowable mesh size for trawl nets as a positive first step in the management of splendid alfonsino. The United States expressed concern that the minimum allowable mesh size of 130 mm may not be large enough to guard against catches of immature splendid alfonsino.

Agenda Item 6. Data collection and reporting

6.1 Observer data

6.2 Fisheries data

15. Korea reported on the progress in the development of data collection and reporting templates. Korea explained that there are currently three data collection lists under consideration (as specified in CMMs 2017-05 and 2017-06, as proposed by Korea, and as proposed by Japan).

16. The SSC BF01 agreed to move forward by developing a data collection list based on the items stipulated in CMMs 2017-05 and 2017-06, for submission to next year's SSC BF meeting. They also recommended that the SSC BF collaborate with the SSC VME in developing the list and other data-related issues.

Agenda Item 7. Review of the CMMs 2017-05 and 2017-06 for bottom fisheries and protection of vulnerable marine ecosystems

17. The United States presented its views on the management of North Pacific armorhead and splendid alfonsino (NPFC-2018-SSC BF01-WP01). The United States expressed concern over the declining catch of North Pacific armorhead and, as shown in NPFC-2018-SSC BF01-WP03, the declining size composition of splendid alfonsino in the Convention Area. Due to the low stock status of North Pacific armorhead in U.S. waters, the United States is obliged, under domestic conservation and management laws, to rebuild the stock to a sustainable level. The United States expressed strong support for the recommendation by the SC to implement an adaptive management process for the North Pacific armorhead fishery.

18. The SSC BF01 had no scientific advice with respect to the proposal above and requested that discussion be deferred to the Commission meeting as it concerns management issues.

19. The SSC BF01 determined that it is not necessary to revise CMMs 2017-05 and 2017-06 at this point in time. However, the SSC BF01 noted that it may become necessary to revise the above CMMs based on the discussions of the SSC BF01 on the Japan's proposal to set a minimum allowable mesh size for trawl nets, especially to reduce catch of immature splendid alfonsino.

Agenda Item 8. Review/update of the 2017-2021 Work Plan

20. The SSC BF01 reviewed the 2017-2021 Work Plan and updated it as detailed in NPFC-2018-SC03-WP07.

21. The SSC BF01 also recommended considering additional scientific tasks, such as a review of the deep sea bycatch species.

Agenda Item 9. Scientific projects

9.1 Ongoing projects

9.1.1 Spatial management of VMEs and bottom fisheries

22. The Data Coordinator, Mr. Mervin Ogawa, reported on discussions with the Secretariat of the Commission for the Conservation of Antarctic Marine Living Resources on the development and management of the spatial database (NPFC-2018-SSC VME03-WP02).

23. The SSC BF01 agreed to establish an informal small working group (Canada, China, Japan, Korea, Russia, United States) that will work intersessionally to provide suggestions to the Data Coordinator for the spatial management project, in collaboration with the informal small working group of the same nature from the SSC VME.

9.2 New projects

24. The SSC BF01 discussed potential new projects and proposed holding a face-to-face meeting to discuss data requirements, data sharing and other tasks related to bottom fish and VMEs.

Agenda Item 10. Other matters

25. No other issues were discussed.

Agenda Item 11. Recommendations to the Scientific Committee

26. The SSC BF01 recommends the following to the SC:
    a. Endorse Japan's proposal for the adaptive management process for North Pacific armorhead in principle, except for measures related to the strength of recruitment, subject to further evaluation of the survey design for capturing the recruitment conditions and decision on management authority for the fishery which shall be presented at the 2019 meeting of the SSC BF or SC.
    b. Endorse the setting of a minimum allowable mesh size (130 mm) for trawl nets to reduce fishing pressure on immature splendid alfonsino and consider revision of CMM 2017-05 at the upcoming Commission meeting.
    c. The SSC BF had no scientific advice with respect to the US proposal to ban fishing NPA and splendid alfonsino and suggests that SC defer the proposal to the Commission meeting.
    d. Maintain the wording of the bottom fish-related sections of CMM 2017-06.
    e. Endorse the updated 2017-2021 SSC BF Work Plan (NPFC-2018-SC03-WP07).
    f. Consider additional scientific tasks, such as a review of the deep sea bycatch species.
    g. Endorse the updated list of projects from the SSC BF as detailed in NPFC-2018-SC03-WP08.

Agenda Item 12. Next meeting

27. The SSC BF01 requests the guidance of the SC for determining the date and location of the next meeting.

Agenda Item 13. Adoption of the Report

28. The SSC BF01 Report was adopted by consensus.

Agenda Item 14. Close of the Meeting

29. The SSC BF01 closed at 10:24 on 12 April 2018.

3rd Meeting of the Small Scientific Committee on Pacific Saury

13-16 April 2018
Tokyo, Japan
Meeting Report

3rd Meeting of the Small Scientific Committee on Pacific Saury

AGENDA

Agenda Item 1. Opening of the meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Meeting arrangements

Agenda Item 4. Review of Member's fisheries and research activities

Agenda Item 5. Report and recommendations from the 2nd TWG PSSA meeting and intersessional work of the TWG PSSA

Agenda Item 6. Update of the stock assessment using "provisional base models" (BSSPM)

- 6.1 Review of data quality
  - 6.1.1 Catch statistics
  - 6.1.2 CPUE indices
  - 6.1.3 Biomass index
- 6.2 Review of the existing model, stock assessment protocol and specification
- 6.3 Update of the analyses using a new set of data
- 6.4 Implication for management of Pacific saury fisheries
  - 6.4.1 Stock biomass, fishing mortality and associated uncertainties
  - 6.4.2 Biological reference points
  - 6.4.3 Risk analyses of alternative catch levels
- 6.5 Possible improvements of the models within BSSPM
- 6.6 Recommendations for future works

Agenda Item 7. Review of the CMM 2017-08 for Pacific saury

Agenda Item 8. Data collection and management

- 8.1 Fisheries information templates
- 8.2 Data security and sharing

Agenda Item 9. Review/update of the 2017-2021 Work Plan

Agenda Item 10. Scientific projects

10.1 Ongoing/planned projects

10.1.1 Stock assessment meeting

10.1.2 Spatial/temporal map of Members' catch and effort

10.1.3 Expert to review Pacific saury stock assessment

10.2 New projects

Agenda Item 11. Other matters

Agenda Item 12. Recommendations to the Scientific Committee

Agenda Item 13. Next meeting

Agenda Item 14. Adoption of the Report

Agenda Item 15. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the meeting

1. The 3rd Meeting of the Small Scientific Committee on Pacific Saury (SSC PS03) took place in Tokyo, Japan on 13, 14, 16 April 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and Vanuatu. The Deep Sea Conservation Coalition (DSCC) attended as an observer. The meeting was opened by Dr. Toshihide Iwasaki (Japan) who served as the SSC PS Chair.

Agenda Item 2. Adoption of Agenda

2. The SSC PS03 agreed to add a new agenda item, "Review of data quality," as the new Agenda Item 6.1, with sub-items "Agenda Item 6.1.1 Catch statistics"; "Agenda Item 6.1.2 CPUE indices"; and "Agenda Item 6.1.3 Biomass index."

3. The revised agenda was adopted.

Agenda Item 3. Meeting arrangements

4. Science Manager Dr. Aleksandr Zavolokin outlined the meeting arrangements.

Agenda Item 4. Review of Members' fisheries and research activities

5. China reported on its Pacific saury fisheries (NPFC-2018-AR-Annual Summary Footprint – Pacific saury (Rev. 1)). In 2017, China operated 55 fishing vessels in the Convention Area. The total catch was 48,458 tons. With regard to research activities, China has started collecting biological data as part of a fisheries-dependent survey.

6. Russia reported on its Pacific saury fisheries (NPFC-2018-AR-Annual Summary Footprint – Pacific saury (Rev. 1)). Russia explained that the difference between its catch data as compiled by the NPFC and its catch data as reported to the Food and Agriculture Organization of the United Nations (FAO) was due to the way in which catch is reported by Russian fishing vessel owners. However, this does not pose an issue for the stock assessment because the stock assessment uses the catch data as reported to FAO, which has been reviewed and approved by the Russian Research Institute of Fisheries and Oceanography (VNIRO) and Federal Agency for Fishery. Russia also explained that it is currently reviewing the amount of catch taken from the Convention Area and catch taken from national waters. In addition, Russia reported that its catch had decreased in 2017, not only as a result of fewer fishing vessels and days, but also because of decreased CPUE.

7. Korea reported on its Pacific saury fisheries (NPFC-2018-AR-Annual Summary Footprint – Pacific saury (Rev. 1)). The total amount of catch for 2017 in the Convention Area and Russian waters were 12,471 and 2,882 tons, respectively. In 2017, Korea operated 13 Pacific saury fishing vessels and the total number of fishing days was 915.

8. Japan reported on its Pacific saury fisheries (NPFC-2018-AR-Annual Summary Footprint – Pacific saury (Rev. 1)). The preliminary estimate for the total amount of catch for 2017 was 84,528 tons. Japan operated 197 Pacific saury fishing vessels in national waters in 2017, which is fewer than in 2016, but the number of fishing days increased. Despite the increased overall effort, the catch amount decreased.

9. Chinese Taipei reported on its Pacific saury fisheries (NPFC-2018-AR-Annual Summary Footprint – Pacific saury (Rev. 1)). In 2017, Chinese Taipei operated 84 Pacific saury fishing vessels. The preliminary estimated catch for 2017 was 106,544 tons.

10. Vanuatu reported on its Pacific saury fisheries (NPFC-2018-AR-Annual Summary Footprint – Pacific saury (Rev. 1)). In 2017, Vanuatu made a similar fishing effort to 2016 but catch decreased to 4,437 tons. Vanuatu is currently not engaging in any research activities related to Pacific saury.

Agenda Item 5. Report and recommendations from the 2nd TWG PSSA meeting and intersessional work of the TWG PSSA

11. The Chair of the Technical Working Group on Pacific Saury Stock Assessment (TWG PSSA), Dr. Toshihide Kitakado (Japan), reported on the 2nd TWG PSSA meeting and the intersessional work of the TWG PSSA (NPFC-2017-TWG PSSA02-Final Report; NPFC-2018-SSC PS03-WP02-11).

12. The SSC PS03 adopted the report of the 2nd TWG PSSA meeting.

13. The SSC PS03 discussed the state of the stock assessment work. It recognized that the TWG PSSA has developed a good framework, consisting of an age-aggregated production model and three base case scenarios, and noted that the eventual goal is to conduct one integrated stock assessment for all Members.

Agenda Item 6. Update of the stock assessment using "provisional base models" (BSSPM)

6.1 Review of data quality

6.1.1 Catch statistics

14. China reported on its data collection system and coverage. The China Overseas Fisheries Association (COFA) collects commercial fisheries data via a log book system. Each vessel submits its log books to COFA, as well as weekly reports. Shanghai Ocean University collects scientific data and double-checks fishing positions using the Chinese government's vessel monitoring system (VMS). China has 100% data coverage.

15. Russia reported on its data collection system and coverage. Russia has an electronic reporting system and a VMS established by the Russian government. All vessels in national waters report their catch on a daily basis. Russia has 100% data coverage. Russia also operates an observer program.

16. Korea reported on its data collection system. Korea had two sources of catch information before September 2015, when the electronic logbook system was launched. The National Institute of Fisheries Science (NIFS) has collected the catch data by logbook, while Korean Overseas Fisheries Association (KOFA) has collected total catch data from fishing vessels. However, since the e-logbook system was launched, both total catch and logbook data are collected by e-logbook system, and its coverage is 100%.

17. Japan reported on its data collection system and coverage. Japan has two data collection systems: landing at ports (preliminary value) and official survey of the Ministry of Agriculture, Forestry and Fisheries (fixed data). It checks the data from the two sources against each other. The difference between preliminary and fixed data is less than 3%. The coverage of data is 100%. Official log books are also submitted one year after the completion of operations to verify positioning.

18. Chinese Taipei reported on its data collection system and coverage. Data is collected through an electronic log book system and from port landings. The data collected from the two sources are checked against each other. Chinese Taipei also operates a VMS. Data are reported daily. Data coverage is almost 100%. The data-holding organization is the Overseas Fisheries Development Council.

19. Vanuatu reported on its data collection system and coverage. Some fishing vessels submit their catch log books each month, while others submit them after the completion of a fishing trip. Data coverage is 100%.

20. The Members discussed issues and concerns with respect to catch statistics used for Pacific saury stock assessment. They provided explanations and identified actions required to enhance catch data quality (Annex).

21. The SSC PS03 recognized that there are uncertainties in Members' catch data and that it is necessary to continue to improve the quality of the data. In particular, China expressed concern that there may be a bias in the data, which could potentially result in a misinterpretation of the stock assessment results. China further expressed its concern on the frequent changes of the data in the annual reports of Japan and encouraged Japan to make efforts to clarify this issue. Japan pointed out that the difference in the data is less than 3% and has little effect on the stock assessment.

22. The SSC PS03 recommended that Members submit accurate catch data as soon as possible.

6.1.2 CPUE indices

23. CPUE indices were aggregated for stock assessment (NPFC-2018-SSC PS03-WP02) from CPUE standardization documents presented by China (NPFC-2018-SSC PS03-WP04), Russia (NPFC-2018-SSC PS03-WP08-09), Korea (NPFC-2018-SSC PS03-WP07), Japan (NPFC-2018-SSC PS03-WP05) and Chinese Taipei (NPFC-2018-SSC PS03-WP10).

24. The Members discussed issues and concerns with respect to the CPUE indices used for Pacific saury stock assessment. They provided explanations and identified actions required to improve the CPUE indices (Annex).

6.1.3 Biomass index

25. Japan presented the biomass estimate from its fishery-independent surveys (NPFC-2018-SSC PS03-WP06).

26. The Members discussed issues and concerns with respect to the Pacific saury biomass index used for Pacific saury stock assessment. They provided explanations (Annex).

6.2 Review of the existing model, stock assessment protocol and specification

27. The SSC PS03 reviewed and maintained the existing model, stock assessment protocol and specification.

6.3 Update of the analyses using a new set of data

28. The SSC PS03 updated the Pacific saury stock assessment, bearing in mind that there still exist data availability issues and technical issues with the CPUE standardization that remain unresolved.

29. China presented an update of the Pacific saury stock assessment using the Bayesian state-space production model (NPFC-2018-SSC PS03-WP12). China considered 11 scenarios (six scenarios using all available data that China considers to be the most likely and five alternative scenarios using the data proposed by individual Members). The six most likely scenarios showed relatively stable assessment results. Pacific saury did not experience overfishing. B/B_{MSY} ratio of Pacific saury showed a mixed picture depending on the scenarios. The q value for the survey biomass index was greater than 1. The results from the alternative scenarios were very sensitive to the input data and prior distributions of parameters.

30. Japan presented an update of the Pacific saury stock assessment using the Bayesian state-space production model (NPFC-2018-SSC PS03-WP13). The current median depletion level is within 13.4-20.8% of K for Japan's three base cases using data set 3 (CPUEs from Japan, Chinese Taipei and Russia, and Japan's biomass survey index). Also, the current median B_{2017}/B_{MSY} is 0.29-0.46. The current median F_{2017}/F_{MSY} is 1.77-2.30. The population is estimated as being severely depleted. A safer option would be the reduction of catch to keep the population at the current level or make it recover to a size above MSY. Given these results, Japan concluded that the Pacific saury population is overfished and the fishing pressure is in a state of overfishing, assuming that overfishing and overfished are defined as $F_{2017}/F_{MSY}>1.5$ and $B_{2017}/B_{MSY}<0.5$.

31. Chinese Taipei presented an update of the Pacific saury stock assessment using the Bayesian state-space production model (NPFC-2018-SSC PS03-WP14). In all models it examined, there was a declining trend for biomass since 2005. Although the absolute biomass estimates were sensitive to the uncertainty of survey q, the updated stock status is relatively pessimistic compared to the previous assessment. Given the current high fishing mortality and decreasing biomass trend, the stock will likely be severely depleted. Chinese Taipei believes that a precautionary approach to fishing effort control is needed.

32. The SSC PS03 agreed that the limit reference points have not been defined for Pacific saury, which prevents the determination of overfished or overfishing stock status.

33. Each Member who submitted a stock assessment for Pacific saury provided the model output in the table (Annex) for three model scenarios, along with the Kobe plots for China and Japan's model outputs. The Kobe plot for Chinese Taipei's model output was not included as Members did not have sufficient time to review the sensitivity analyses. It was noted that model data sources may differ between assessment scenarios. Assessment details are available in working papers NPFC-2018-SSC PS03-WP12, NPFC-2018-SSC PS03-WP13, NPFC-2018-SSC PS03-WP14.

34. The SSC PS03 discussed the provided model output (Annex) and agreed upon the following summary:

    i. There are wide variations in model output between the model configurations. The mean MSY estimates in the scenarios range from 37.7-57.6 (10^4 tons). The median MSY estimates in the scenarios range from 34.6-55.5 (10^4 tons). Mean F_{msy} estimates ranged from 0.11-0.68. Median F_{msy} estimates ranged from 0.10-0.53. Mean terminal year biomass in models with terminal year 2017 ranged from 41.6-260.8 (10^4 tons). Mean B_{2017}/B_{MSY} and F_{2017}/F_{MSY} ranged from 0.29-1.06 and 0.11-4.36, respectively. Median B_{2017}/B_{MSY} and F_{2017}/F_{MSY} ranged from 0.29-1.08 and 0.11-2.61, respectively.

    ii. The three model scenarios differed in their treatment of catchability (q) for the Japanese biomass survey. Model scenarios 1, 2, and 3 required catchability to be estimated but constrained to less than 1, fixed at 1, or estimated and allowed to be greater than 1, respectively. For all Members' base scenarios, models with q constrained to less than 1 had the highest estimates for B_{MSY}, B_{2017}/B_{MSY} and MSY, and models with q unconstrained had the lowest estimates for B_{MSY} and MSY. B_{2017} is the biomass in 2017. The reverse pattern was true for F_{MSY}.

    iii. Model scenarios submitted by Members differed in which CPUE indices were included in the models. Chinese model scenarios which included the 1980-1993 CPUE index from Japan estimated higher mean B_{MSY} and MSY than scenarios which did not include this index. Model scenarios excluding Chinese and Korean CPUE indices were presented in Japan's scenarios 1-3 and sensitivity scenario. Chinese Taipei updated its base case scenario and included the results in the table (Annex).

35. Japan stated that 1980-1993 CPUE index is not appropriate because Japan considers that there are changes in catchability that cannot be standardized.

36. Canada, China and Korea stated the importance of making all the data available to all Members for the stock assessment.

6.4 Implication for management of Pacific saury fisheries

6.4.1 Stock biomass, fishing mortality and associated uncertainties

37. The SSC PS03 was unable to determine the stock status because uncertainties with the data remain unresolved, there is a lack of a standardized approach in terms of data usage and model configuration, and target and limit reference points have not been determined.

38. The SSC PS03 agreed on the importance of future projections of population dynamics. Some Members conducted and submitted future projections to the SSC PS03. However, the SSC PS03 decided not to include the future projections in this report because of the above uncertainties.

6.4.2 Biological reference points

39. The SSC PS03 agreed to maintain the MSY approach for the development of biological reference points, as discussed in the 1st Pacific Saury Stock Assessment Workshop.

40. The SSC PS03 recommended that the TWG PSSA seek the possibility to liaise with the Secretariat to conduct an initial literature review and survey of what kinds of target and limit reference points are used in short-lived pelagic species fisheries by other general RFMOs and other fishery management bodies, and requested that the SC set target and limit reference points for Pacific saury based on the TWG PSSA's work.

41. The SSC PS03 recommended that the determination of target and limit reference points should be done in conjunction with the development of harvest control rules with managers.

6.4.3 Risk analyses of alternative catch levels

42. The SSC PS03 recommended that risk analyses of alternative catch levels should be conducted in conjunction with the development of harvest control rules.

43. Japan noted that in the stock assessment report by Japan (NPFC-2018-SSC PS03-WP13), the population dynamics of Pacific saury were projected forward under some scenarios with respect to several levels of reduction/increase of catch as well as status quo. These figures are

generally useful for considering management implications *inter alia* for setting the catch limit. Japan's results showed that a continuation of the current level of catch causes a further decline in the population size to a severely depleted level. Japan therefore expresses its disappointment that the SSC PS03 was not able to reach any agreement to leave figures of future projections in the report due to the objection by some Members.

44. China stated that no conclusion can be made regarding stock status and projection. Pacific saury is a short-lived pelagic species with its stock status being more likely regulated by environmental conditions.

6.5 Possible improvements of the models within BSSPM

45. The SSC PS03 suggested that the models within the BSSPM could be improved by considering the inclusion of environmental variables, agreeing on common data sets, and integrating the results of the different models.

46. The SSC PS03 compiled a preliminary data template for initiating discussions on developing a single joint CPUE index, which may be amended at a later date based on intersessional discussions (Annex).

47. The SSC PS03 agreed to consider developing other stock assessment models using more spatial/temporal information or age-structured models in the future.

6.6 Recommendations for future works

48. Based on the above discussions, the SSC PS03 recommended the following as possible future work:
    a. Continue to review and improve the quality of the data (see Annex).
    b. Continue to improve CPUE standardizations.
    c. Hold further discussions on the possible inclusion of area-weighted CPUE in the CPUE standardization protocol.
    d. Develop a single joint CPUE index.
    e. Develop a standardized approach for conducting future projections.
    f. Recommend that the TWG PSSA seek the possibility to liaise with the Secretariat to conduct an initial literature review and a survey of what kinds of target and limit reference points are used in short-lived pelagic species fisheries by other general RFMOs and fishery management bodies.
    g. Develop harvest control rules in conjunction with managers.
    h. Determine fixed data sets and their usage for stock assessment.

Agenda Item 7. Review of CMM 2017-08 for Pacific saury

49. The SSC PS03 reviewed CMM 2017-08 and discussed whether or not revisions were necessary.

50. Japan proposed adopting a precautionary approach to sustain the Pacific saury stock and fishery based on spatial distribution of immature age-0 fish (NPFC-2018-SSC PS03-WP01). Based on its scientific surveys, Japan found clear differences in the spatial distributional patterns between age-0 and age-1 fish, and that age-0 fish tend to be distributed in more eastern areas. Japan believes it is necessary to avoid the further eastward expansion of fishing grounds to protect immature age-0 fish and maintain the sustainability of the fishery. Chinese Taipei supported setting a precautionary approach and suggested that the boundary could be considered at 170^0E due to large variations of age-0 fish distributions among years.

51. As the SSC PS03 has not yet made a decision on the stock status of the Pacific saury, the SSC PS03 left CMM 2017-08 unchanged at this point in time.

52. Japan stated that it has a strong concern over the decline in Pacific saury stock. The stock assessment results by Japan clearly show that the stock status is no longer healthy. A series of abundance indices and survey information shows pessimistic results. This indicates conservation measures set by CMM 2017-08 are insufficient. Japan states that there is an urgent need to strengthen the management measures of CMM 2017-08 to reduce the fishing mortality on the stock.

53. China stated that the current stock status of Pacific saury is not determined and did not experience overfishing from China's stock assessment. The current CMM 2017-08 is sufficient.

Agenda Item 8. Data collection and management

8.1 Fisheries information templates

54. Korea reported on progress made in the development of fisheries information templates for Pacific saury. The Members agreed on the revised template (Annex) and the template development work has been completed.

8.2 Data security and sharing

55. The Science Manager presented the Interim Guidance for Management of Scientific Data Used in Stock Assessments, explained the data-related recommendations made by the TWG PSSA and encouraged the SSC PS to consider possible revision of the Interim Guidance.

56. The SSC PS03 reviewed the Interim Guidance for Management of Scientific Data Used in Stock Assessments and had no revisions.

57. Russia suggested replacing all vessel names and other sensitive information with hash values when sharing data for Pacific saury stock assessment. Japan explained that it needs to consult with managers before being able to endorse such a recommendation.

Agenda Item 9. Review/update of the 2017-2021 Work Plan

58. The SSC PS03 reviewed the 2017-2021 Work Plan and updated it as detailed in NPFC-2018-SC03-WP07.

Agenda Item 10. Scientific projects

10.1 Ongoing/planned projects

10.1.1 Stock assessment meetings

10.1.2 Spatial/temporal map of Members' catch and effort

10.1.3 Expert to review Pacific saury stock assessment

10.2 New projects

59. The SSC PS03 reviewed the list of projects and updated it as detailed in NPFC-2018-SC03-WP07.

Agenda Item 11. Other matters

60. No other matters were discussed.

Agenda Item 12. Recommendations to the Scientific Committee

61. The SSC PS03 recommends the following to the SC:
    a. The SSC PS03 requests the SC to endorse the revised CPUE Standardization Protocol for Pacific Saury.
    b. The SSC PS03 recognized the necessity to share data for the Pacific saury stock assessment, and agreed that such data should only be shared within the TWG PSSA and be disseminated in accordance with the Interim Guidance for Management of Scientific Data used in Stock Assessments.
    c. The SSC PS03 agreed to create a joint spatial/temporal map of Members' catch and effort on Pacific saury with a spatial resolution of one degree grids and a temporal resolution of one month. The Corresponding Group on Data Collection Template for Pacific saury will conduct this work.
    d. The SSC PS03 agreed to move forward in a new direction to aggregate catch and effort data over Member's fishery to draw a single joint CPUE index to resolve different patterns

in standardized indices among Members and to increase spatial and temporal coverage of catch and effort data. The SSC PS03 agreed to share catch and effort data by month and one degree grids, and to conduct a CPUE standardization based on the data after the 2018 SC meeting.

e. The SSC PS03 endorsed the updated 2017-2021 SSC PS Work Plan (NPFC-2018-SC03-WP07).
f. The SSC PS03 requested the SC to consider revision of the 2017-2021 Work Plan with regards to detailed processes to enable the TWG PSSA to fulfil its duties more efficiently.
g. The SSC PS03 endorsed the updated list of projects from the SSC PS as detailed in NPFC-2018-SC03-WP08.
h. The SSC PS03 agreed to hold a data preparation meeting in November or December 2018 for finalizing data sets for CPUE, biomass index, and catch series, and stock assessment meeting in the first quarter of 2019.
i. The SSC PS03 requests the SC to set limit and target reference points and develop harvest control rules in conjunction with managers.
j. The SSC PS03 endorsed the data information template for Pacific saury (Annex).

Agenda Item 13. Next meeting

62. The SSC PS03 requests the guidance of the SC for determining the date and location of the next meeting.

Agenda Item 14. Adoption of the Report

63. The SSC PS03 Report was adopted by consensus.

Agenda Item 15. Close of the Meeting

64. The SSC PS03 closed at 20:21 on 16 April 2018.

Annexes

Summary of the discussions on data quality (Agenda Item 6.1)

Summary of the estimated key parameters and Kobe plots by China, Japan, and Chinese Taipei

Prototype of the template for data sharing for a single joint CPUE index and a spatial/ temporal map of Members' catch and effort on Pacific saury

Data information template for Pacific saury

Annex

Summary of the discussions on data quality (Agenda Item 6.1)

Issue	Note/Explanation	Action
Catch		
Gap in China's catch data for the 2003-2011 period	China explained that the data for this period has been aggregated and submitted to the Ministry of Agriculture, and that once it is reviewed and approved, China will report it to the NPFC. Furthermore, China explained that only one or two Chinese fishing vessels operated during this period and that they were only engaged in experimental fishing, not full-scale commercial fishing. The catch level was therefore very low.	China will report catch data for the 2003-2011 to the NPFC once it is reviewed and approved.
Frequent changes of Japan's statistics, including unexplained changes in historic catch levels between different annual reports.	Japan explained that it takes time to double check the data from the two sources and therefore it first reports a preliminary value before reporting a fixed value at a later date. Japan also explained that the review of NW and CA data for 2015 and 2016 are almost complete, and that if any changes are made to the data, which is unlikely, they will be minor. Furthermore, Japan explained that the 2017 catch statistics will likely be confirmed in a year.	Japan stated that it will make an effort to improve its data collection and reporting system. SSC PS03 recommends establishing a mechanism whereby when Members make updates or notice updates made by other Members, they should notify the Secretariat, which will in turn notify all Members.
Amendments of catch statistics of Japan for 2016, Russia for 2014 to 2016, and Chinese Taipei for 2016	Japan explained that the initially-reported amount was a provisional estimate based on port landing, while the updated amount is the final, fixed data based on interviews with fishermen. Russia explained that the initially-reported amounts are based on the data from Russia's Center of Fishery	Discuss data updating guidelines in the data preparatory meeting.

	Monitoring and Communication, while the updated amounts are the final official figures reported to the FAO. Chinese Taipei explained that the change was less than 500 tons, and that it updated the amount after cross-checking e-log book data and landing data.	
CPUE index		
China shifted from experimental fisheries to full-scale commercial fisheries in 2012, with an increase in the number of Chinese vessels fishing Pacific saury, and that this should be addressed in the standardization.	Japan suggested either separating the CPUE data into two time series, one for 2003-2011 and the other for 2012 onwards, or simply eliminating the data for the 2003-2011 period. China disagreed, pointing out that the size of the vessels remained the same in the two periods, and that the increase in effort and catch efficiency only increased gradually, rather than suddenly, from 2012 onwards.	
Korea eliminated certain data due to uncertainties they contained. The nominal CPUE and its trend changed.	Japan considers it difficult to make judgments about Korea's CPUE standardization and that this standardization should not be included in the stock assessment.	Korea expressed its willingness to work with other Members to improve the quality of its CPUE standardization.
Concern over Japan's decision to eliminate the CPUE data from 1980 to 1993.	Japan explained that from the 1980s, the size structure of Japanese vessels changed significantly. Furthermore, new fishing technologies were introduced among Japanese vessels from the 1970s onwards, increasing their fishing efficiency. However, vessels' equipment records from before the mid-1990s are not available. Therefore, Japan determined that the data from 1980 to 1993 is likely to be biased and decided to eliminate the data from this period.	No consensus with respect to the action required. The concerned Members believed that, nonetheless, this data should be made available to the Commission. Another Member pointed out that, if Members will include this data in the CPUE standardization, they need to be very careful, as no Members other than Japan have data for this time period. Some Members recommended that, for the stock assessment,

		Members should follow the same method as Russia, which provided all historic data for consideration of the Commission, independent of what data it incorporated into its own CPUE.
Concern about Members' validation of conventional model selection criteria, e.g. AIC, BIC or R2, for CPUE standardization.	China recommended that all Members make their GLM and GAM estimates and results available.	
Biomass index		
Stratification design of the survey	China pointed out that Japan is applying post-stratification, which is not common for estimating biomass index. China recommended that Japan apply random stratification before conducting its survey. Japan explained that because the sea surface temperature fluctuates every year, it is difficult to decide on the survey points before the start of the survey.	

Annex

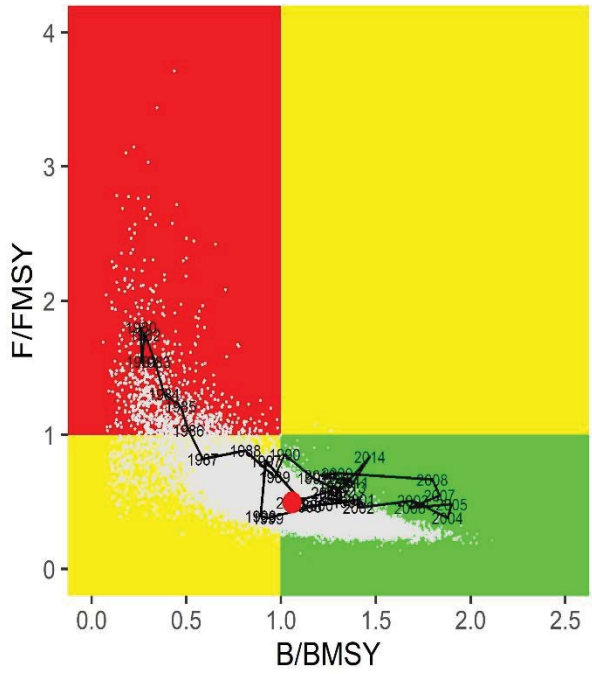
Summary of the estimated key parameters and Kobe plots by China, Japan, and Chinese Taipei

		China			Japan			Chinese Taipei		
Scenarios	Parameters	Mean	Median	CV	Mean	Median	CV	Mean	Median	CV
1	K (10000 mt)	648.02	565.15	0.47	853.9	722.4	0.493	500.10	477.90	0.23
	r	1.86	1.5	0.7	0.718	0.400	1.027	0.70	0.56	0.75
	Shape	0.41	0.19	2	0.592	0.376	0.945	0.63	0.52	0.72
	B1980/K (B1994/K)	0.11	0.11	0.43	0.459	0.431	0.475	0.80	0.60	0.84
	MSY (10000 mt)	57.59	55.52	0.29	37.7	34.6	0.638	42.47	41.33	0.34
	Fmsy	0.23	0.23	0.27	0.114	0.1	0.668	0.22	0.21	0.45
	Bmsy (10000 mt)	273.11	234.3	0.57	379.7	322.0	0.511	226.80	217.90	0.23
	B1980 (B1994)	66.99	60.75	0.44	305.3	273.3	0.368	394.90	294.60	0.86
	B2017	260.81	251	0.22	153.0	137.0	0.361	169.00	162.30	0.24
	F1980 (F1994)	0.41	0.39	0.37	0.119	0.122	0.253	0.11	0.08	1.17
	F2017	0.11	0.11	0.19	0.188	0.193	0.244	0.18	0.18	0.25
	B2017/K	0.44	0.45	0.25	0.214	0.208	0.454	0.35	0.34	0.25
	B2017/Bmsy	1.06	1.08	0.26	0.490	0.460	0.487	0.77	0.75	0.26
	F2017/Fmsy	0.11	0.11	0.19	2.319	1.765	0.756	1.01	0.86	0.71
	Assumption of q	q~U(0,1)			q~U(0,1)			1/q~gamma(0.01,0.01)		
	q	0.87	0.9	0.13	0.779	0.82	0.221	0.86	0.89	0.13
2	K (10000 mt)	542.75	493.5	0.39	755.8	602.8	0.540	454.90	433.40	0.22
	r	1.91	1.58	0.66	0.751	0.443	0.976	0.71	0.57	0.73
	Shape	0.38	0.2	1.76	0.612	0.404	0.908	0.67	0.55	0.71
	B1980/K (B1994/K)	0.12	0.11	0.41	0.409	0.38	0.511	0.79	0.60	0.83
	MSY (10000 mt)	54.24	53.24	0.24	37.9	35.6	0.545	40.81	39.97	0.30
	Fmsy	0.25	0.26	0.24	0.131	0.117	0.593	0.23	0.22	0.43
	Bmsy (10000 mt)	227.55	205.2	0.47	337.8	273.8	0.556	207.90	200.00	0.22
	B1980 (B1994)	59.12	54.16	0.41	222.5	217.4	0.137	354.10	268.90	0.86
	B2017	223.84	222.3	0.15	111.1	109.7	0.110	143.30	140.70	0.18
	F1980 (F1994)	0.46	0.44	0.35	0.152	0.153	0.126	0.12	0.09	1.06
	F2017	0.12	0.12	0.15	0.241	0.242	0.105	0.21	0.21	0.20
	B2017/K	0.44	0.45	0.23	0.186	0.182	0.449	0.33	0.32	0.25
	B2017/Bmsy	1.06	1.08	0.24	0.421	0.403	0.472	0.72	0.70	0.26
	F2017/Fmsy	0.51	0.47	0.38	2.461	1.980	0.660	1.10	0.95	0.63
	Assumption of q	q=1			q=1			q=1		
	q	1	1	0						
3	K (10000 mt)	205.24	186.9	0.47	534.8	384.7	0.723	207.00	188.90	0.42
	r	2.31	2.06	0.53	0.956	0.694	0.720	1.00	0.91	0.50
	Shape	0.75	0.35	1.63	0.716	0.556	0.779	1.13	0.98	0.62
	B1980/K (B1994/K)	0.16	0.14	0.43	0.298	0.273	0.575	0.66	0.54	0.68
	MSY (10000 mt)	44.09	43.35	0.13	49.1	42.9	0.509	40.01	39.91	0.13
	Fmsy	0.54	0.53	0.31	0.243	0.237	0.393	0.68	0.55	0.93
	Bmsy (10000 mt)	89.83	81.85	0.45	242.4	175.7	0.716	101.60	93.99	0.37
	B1980 (B1994)	27.66	25.13	0.4	107.8	94.0	0.440	139.90	101.30	0.94
	B2017	67.79	62.69	0.45	53.8	47.1	0.431	41.64	35.97	0.55
	F1980 (F1994)	0.98	0.95	0.33	0.344	0.354	0.274	0.48	0.05	2.02
	F2017	0.48	0.42	0.5	0.545	0.562	0.264	3.27	1.33	1.09
	B2017/K	0.34	0.35	0.3	0.134	0.134	0.498	0.20	0.19	0.30
	B2017/Bmsy	0.77	0.77	0.31	0.292	0.289	0.509	0.57	0.54	0.27
	F2017/Fmsy	0.88	0.81	0.38	2.519	2.295	0.417	4.36	2.61	0.92
	Assumption of q	q~U(0,3)			q~U(0,3)			1/q~gamma(0.01,0.01)		
	q	3.83	3.58	0.39	2.279	2.403	0.243	3.92	3.73	0.40
Sensitivity	K (10000 mt)	226.21	208.4	0.38	315.0	206.6	0.964	221.80	204.00	0.41
test	r	2.25	1.99	0.54	1.308	1.227	0.483	0.99	0.88	0.54
	Shape	0.59	0.34	1.36	0.933	0.867	0.625	1.07	0.92	0.63
	B1980/K (B1994/K)	0.15	0.13	0.4	0.275	0.262	0.502	0.66	0.53	0.70
	MSY (10000 mt)	45.26	44.54	0.12	52.0	47.2	0.476	40.21	39.90	0.14
	Fmsy	0.5	0.49	0.28	0.509	0.47	0.515	0.61	0.51	0.84
	Bmsy (10000 mt)	98.4	90.98	0.36	145.2	98.2	0.917	108.10	100.30	0.37
	B1980 (B1994)	29.72	27.06	0.41	64.7	48.5	1.036	149.30	108.30	0.95
	B2017	97.97	89.52	0.43	34.6	25.8	1.031	56.85	48.06	0.61
	F1980 (F1994)	0.91	0.88	0.34	0.733	0.686	0.490	0.42	0.25	1.98
	F2017	0.32	0.3	0.4	1.089	1.024	0.493	1.97	0.80	1.44
	B2017/K	0.44	0.44	0.25	0.135	0.137	0.443	0.25	0.24	0.36
	B2017/Bmsy	1	1	0.24	0.279	0.274	0.451	0.51	0.48	0.38
	F2017/Fmsy	0.32	0.3	0.4	2.286	2.121	0.345	2.75	1.69	1.12
	Assumption of q	No biomass indices used			No biomass indices used			No biomass indices used		
	q	1980-2017			1994-2017			1980-2017		
	Catch data	1980-2017			1994-2017			1980-2017		
	Abudance indices	JPN CPUE I (1980-1993) JPN CPUE II (1994-2017) CT CPUE (2003-2016) CHN CPUE (2003-2017) KOR CPUE (2001-2016) RUS CPUE I (1994-2002) RUS CPUE II (2003-2017) JPN Biomass (2003-2017)			JPN_CPUE (1994-2017) RUS_CPUE_only (1994_2017) CT_CPUE (2001-2016) JPN_Biomass (2003-2017)			JPN (1994-2017) RUS_only (1994-2017) KR (2001-2016) CN (2003-2017) CT (2001-2016) JPN_Biomass (2003-2017)		

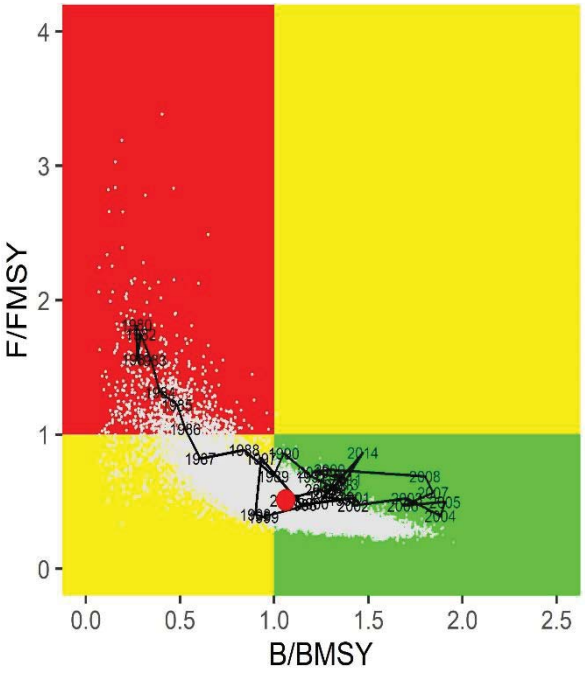
Note: For the consistency of metrics among various members, Chinese Taipei has provided the assessment outputs until 2017.

CHINA

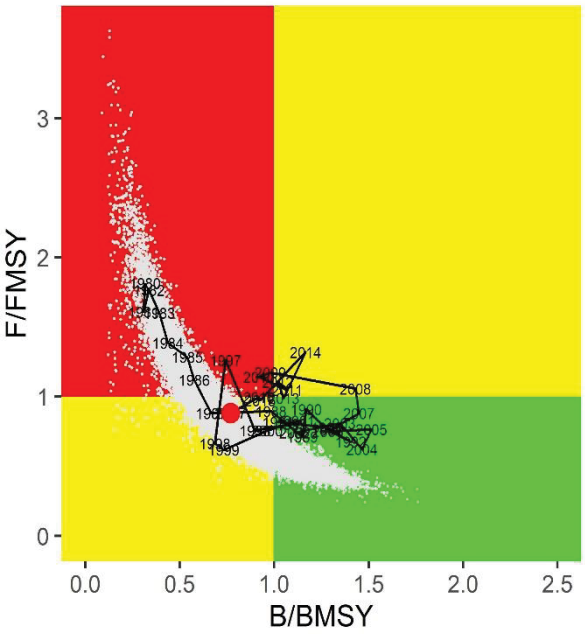
Model 1



Model 2

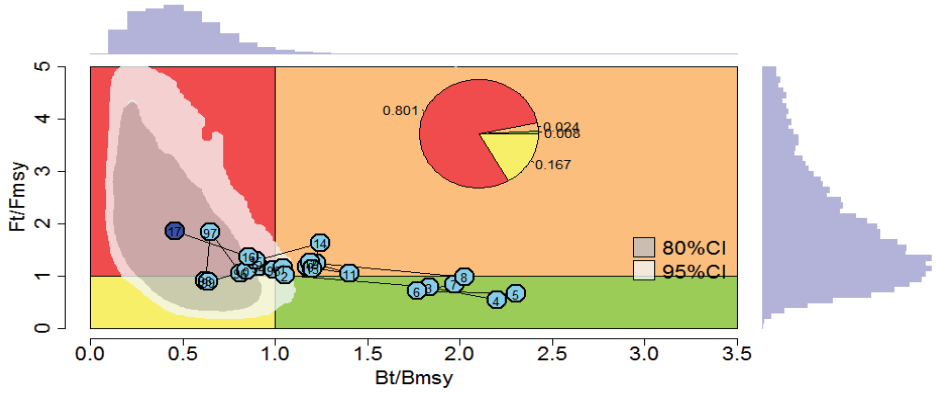


Model 3

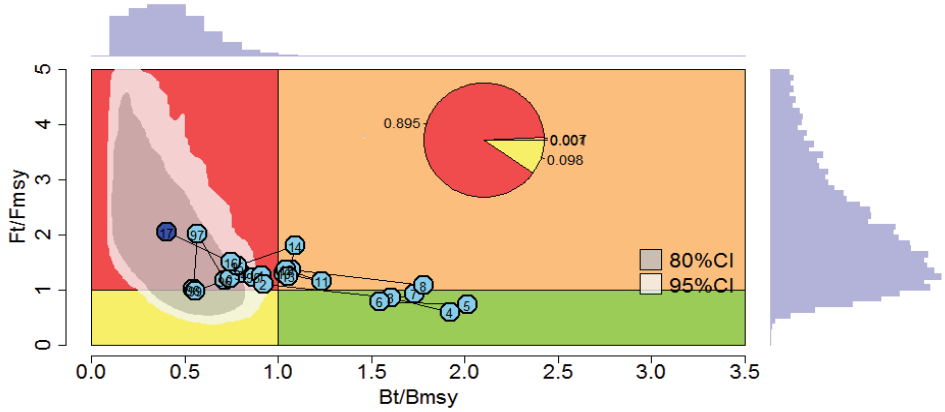


JAPAN

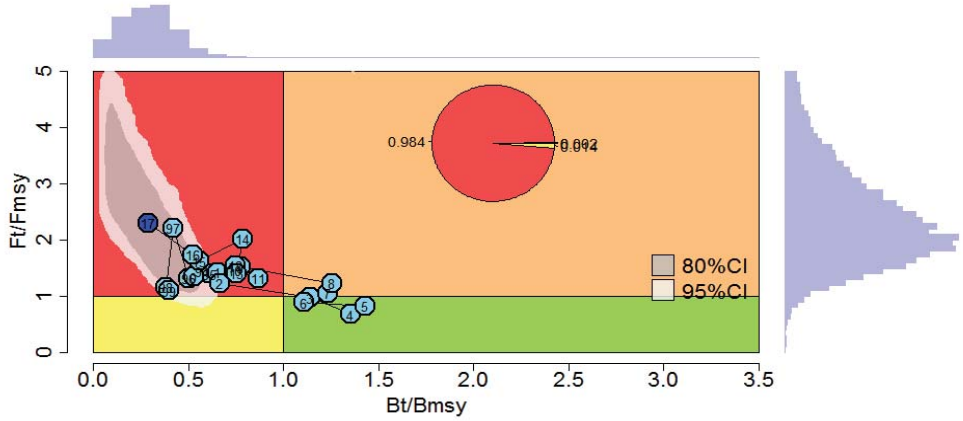
Model 1



Model 2



Model 3



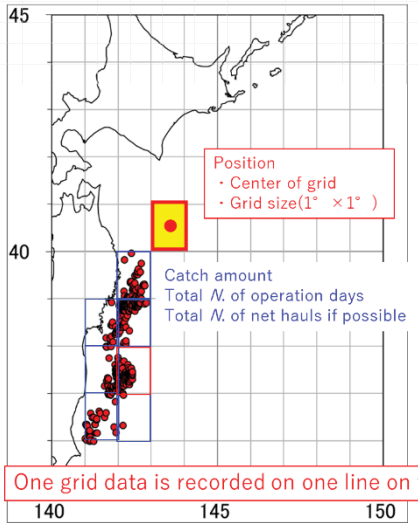
Annex

Prototype of the template for data sharing for a single joint CPUE index and a spatial/temporal map of Members' catch and effort on Pacific saury

Member	Year	Month	Duration Month Early Middle Late Date	Center of grid		Mesh size of Grid	Catch amount (metric ton)	Effort		Remarks	Estimated catch by ages (N. Individuals)		Measurement length select (FL, TL, KnL, BL)	Estimated catch by length class in each 1cm (N. Individuals)																											
				Latitude (°N)	Longitude (°E)			Total operation days for all vessels	Total net hauls for all vessels		Age-0	Age-1		<15	15≤	16≤	17≤	18≤	19≤	20≤	21≤	22≤	23≤	24≤	25≤	26≤	27≤	28≤	29≤	30≤	31≤	32≤	33≤	34≤	35≤
Japan	2019	Oct.	Early	36.30	141.30	0.5°	348	11	105	Example	3,265	641,993	KnL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,453	######	######	######	######	0	0	0
Japan	2019	Oct.	Month	37.30	141.30	1.0°	2,425	98	968	Example	258,504	3,711,067	KnL	0	0	0	0	0	17,725	0	0	0	######	2,092	######	######	######	######	######	######	######	######	0	0	0
Japan	2019	Oct.	Month	37.30	142.30	1.0°	4,437	138	1,170	Example	52,193	1,093,407	KnL	0	0	0	0	0	0	0	0	0	0	0	0	######	######	######	######	######	######	######	###	0	0
Japan	2019	Oct.	Month	37.30	141.30	1.0°	6,253	498	5,526	Example	45,912	1,997,132	KnL	0	0	0	0	0	0	0	0	0	0	4,339	0	27,293	0	39,023	######	######	######	95,128	0	0	0
Japan	2019	Oct.	Month	38.30	142.30	1.0°	964	22	146	Example	290,628	1,138,466	KnL	0	0	0	0	#######	13,741	0	0	41,224	13,741	0	27,483	68,706	68,706	######	######	######	######	27,483	0	0	0
Japan	2019	Oct.	Month	39.30	142.30	1.0°	1,576	30	350	Example	110,008	2,326,253	KnL	0	0	0	0	0	0	0	0	0	0	0	0	36,487	12,162	######	######	######	######	83,507	0	0	0

Required item
If possible

hexadecimal number
37° 30' ⇒ 37.30
145° 30' ⇒ 145.30



One grid data is recorded on one line on the table

Annex

Data information template for Pacific saury

Stick-held-dip net fishing information format

No.	Items	Example
1	**Vessel flag**	KR
2	**Vessel name**	77Dongnam
3	**Vessel call sign (if allocated)**	1ABC
4	**Vessel Reg No**	xxxxxxxx-xxxxxxx
5	**Lloyd's/ IMO Number (if allocated)**	xxxxxxx
6	**Light bulb types (traditional/ LED)**	traditional
7	**(if traditional bulb) Total light power (kW)**	xxx kW
8	**Date of Fishing Activity: date and time (UTC or Local time)**	4/14/18 12:00 AM
9	**Fishing position : latitude (DD,MM.mm)**	44, 10.10
10	**Fishing position : longitude (DD,MM.mm)**	153, 10.10
11	**Sea Temperature (°C)**	15
12	**Number of haul**	3
13	**Species code (FAO 3-alpha code) include bycatch species**	SAP
	Retained: Live weight (kg)	3000
	Discarded: Live weight (kg)	0
14	**(Bycatch) Species code (FAO 3-alpha code)**	OFJ
	Retained: Live weight (kg)	0
	Discarded: Live weight (kg)	10

Biological Data Collection

No.	Items	Example
1	**Sampled location (fleet/port/lab)**	fleet
2	**Fishing Date or Fishing position**	4/14/18 12:00 AM
3	**Length (FL,BL,TL in cm)**	FL 15
4	**Sex**	M (Male), F (Female), U (Unknown), I (Indeterminate)
5	**Maturity Stage**	1 (Immature), 2 (Developing/Resting), 3 (Developed), 4 (Ripe), 5 (Spent)
6	**Age (if possible)**	1

3rd Scientific Committee Meeting

17-20 April 2018
Tokyo, Japan
Meeting Report

3rd Scientific Committee Meeting

Agenda

Agenda Item 1. Opening of the meeting

Agenda Item 2. Adoption of Agenda

Agenda Item 3. Meeting arrangements

Agenda Item 4. Review of reports and recommendations from the Small Scientific Committees (SSCs) and Technical Working Group on Chub Mackerel Stock Assessment

- 4.1 SSC on Vulnerable Marine Ecosystems
- 4.2 SSC on Bottom Fish
- 4.3 SSC on Pacific Saury
- 4.4 Technical Working Group on Chub Mackerel Stock Assessment

Agenda Item 5. Progress in data collection, management and security

- 5.1 Data reporting templates (Korea)
- 5.2 Observer Program (Secretariat)
- 5.3 Information security regulations (USA and Canada)
- 5.4 NPFC data management system (Secretariat)

Agenda Item 6. Scientific projects for 2018 and 2019

- 6.1 Ongoing/planned projects
- 6.2 New projects
- 6.3 Review and prioritization of projects

Agenda Item 7. 2017-2021 Research Plan and Work Plan

Agenda Item 8. Cooperation with other organizations

- 8.1 Joint PICES-NPFC Study Group
- 8.2 NPAFC's multinational survey in the North Pacific
- 8.3 Cooperation with other organizations

Agenda Item 9. Other matters

9.1 Information on resumption of deep water crab fishery

9.2 Structure of the Scientific Committee

9.3 MCS related issues from SC to TCC

Agenda Item 10. Advice and recommendations to the Commission

Agenda Item 11. Next meeting

Agenda Item 12. Adoption of the Report

Agenda Item 13. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the meeting

1. The 3rd Meeting of the Scientific Committee (SC03) took place in Tokyo, Japan on 17-20 April 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America and Vanuatu. The meeting was opened by Dr. Joji Morishita (Japan) who served as the SC03 Chair.

2. Japan, as the host Member, extended its sincere welcome to the participants. Japan highlighted the importance that each Member placed on the work conducted by the North Pacific Fisheries Commission (NPFC) to date, and appreciated the strong will shown by the Members to achieve further progress. Finally, Japan expressed its wish for the success of the meeting.

Agenda Item 2. Adoption of Agenda

3. The agenda was adopted without revision.

Agenda Item 3. Meeting arrangements

4. Science Manager Dr. Aleksandr Zavolokin outlined the meeting arrangements.

Agenda Item 4. Review of reports and recommendations from the Small Scientific Committees (SSCs) and Technical Working Group on Chub Mackerel Stock Assessment

4.1 SSC on Vulnerable Marine Ecosystems (SSC VME)

5. The Chair of the SSC VME, Ms. Bai Li (China), summarized the outcomes and recommendations of the 3rd SSC VME meeting (NPFC-2018-SSC VME03-Final Report).

6. The Members expressed their appreciation for the achievements of the SSC VME03 and also the NPFC/FAO workshop held in March 2018, noting that they form a strong foundation for VME-related work.

7. The SC03 reviewed the recommendations of the SSC VME03 and made recommendations to the Commission as described in Agenda Item 10.

8. The SC03 endorsed the holding of a VME-related data workshop in November 2018.

4.2 SSC on Bottom Fish (SSC BF)

9. The Chair of the SSC BF, Dr. Taro Ichii (Japan), summarized the outcomes and recommendations of the 1st SSC BF meeting (NPFC-2018-SSC BF01-Final Report).

10. The SC03 reviewed the recommendations of the SSC BF01 and made recommendations to the Commission as described in Agenda Item 10.

11. The SC03 discussed two management measures proposed by Japan during the SSC BF01 meeting (adaptive management process and minimum allowable mesh size) and highlighted the potential complementarity between the proposals. The United States drew attention to the working paper it submitted to the SSC BF01 proposing a fishing ban on North Pacific armorhead and splendid alfonsino as a precautionary measure until the approval and implementation of the adaptive management process. Canada also pointed out the need to review the scientific aspects of the 50% bycatch limit in the adaptive management process proposal.

12. The SC03 agreed to continue working on the existing scientific tasks and consider additional scientific tasks including a review of the deep sea bycatch species.

13. The SC03 discussed the suggestion made by the SSC BF01 to hold a data workshop and agreed on the holding of a joint VME- and bottom fish-related data workshop in November 2018. The SC03 adopted the TOR for the workshop (Annex).

4.3 SSC on Pacific Saury (SSC PS)

14. The Chair of the SSC PS, Dr. Toshihide Iwasaki (Japan), summarized the outcomes and recommendations of the 3rd SSC PS meeting (NPFC-2018-SSC PS03-Final Report).

15. The SC03 reviewed the recommendations of the SSC PS03 and made recommendations to the Commission as described in Agenda Item 10.

16. The SC03 agreed, based on discussions initiated in the SSC PS03, to hold a workshop on biological reference points (BRP), harvest control rule (HCR) and management strategy evaluation (MSE). The SC03 adopted the TOR for the workshop (Annex).

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

17. The Chair of the TWG CMSA, Dr. Oleg Katugin (Russia), summarized the outcomes and recommendations of the 1st TWG CMSA meeting (NPFC-2017-TWG CMSA01-Final Report).

18. The SC03 reviewed the recommendations of the TWG CMSA01 and made recommendations to the Commission as described in Agenda Item 10.

Agenda Item 5. Progress in data collection, management and security

5.1 Data collection/reporting templates

19. Korea reported on the work done by the Corresponding Groups in developing standardized templates for data collection and reporting for Pacific saury (complete), bottom fish (in progress), squids (in progress), chub mackerel (early stages) and crab fisheries (not yet started). This work is progressing in line with the SC's Five-Year Work Plan.

20. The SC03 discussed the development of the chub mackerel data template and agreed to create a comprehensive template for all gear types, by intersessional communication among the TWG CMSA members and Korea.

21. The Science Manager reported that the compiled annual summary of Members' fishing footprints for bottom fisheries, chub and spotted mackerels, Japanese sardine, Pacific saury and squids are available on the NPFC website.

5.2 Observer Program

22. The Science Manager presented the compiled information about the existing observer programs of the NPFC Members as well as those of other regional fisheries management organizations (RFMOs) as reference for the development of a regional NPFC observer program as stipulated in the Convention and CMMs (NPFC-2018-SC03-WP03).

23. The SC03 began discussions to identify which scientific data should be collected by NPFC observer programs for each target species. The SC03 drafted a template for identification of such data as an example based on the Pacific saury data information template (Annex) and agreed to continue this work for other target species. The template will be filled in intersessionally by the Small Working Groups on Data Collection Template starting from bottom fish, VME and Pacific saury and will be presented to the SC in 2019.

5.3 Information security regulations

24. The Science Manager presented data security and management issues from the recent meetings and intersessional work of the SC subsidiary bodies (NPFC-2018-SC03-IP02) for discussion by the SC03.

25. Based on the discussion, the SC03:

    (a) Drafted regulations for the management of scientific meeting documents, meeting reports and intersessional communications on the NPFC collaboration website (Annex).

    (b) Agreed to work intersessionally before the Commission meeting in July 2018 to review potential issues related to the sharing of data and, if necessary, revise the Interim Guidance for Management of Scientific Data used in Stock Assessments.

5.4 NPFC data management system

26. The Data Coordinator, Mr. Mervin Ogawa, reported on the development of the NPFC data management system (NPFC-2018-SC03-WP04).

Agenda Item 6. Scientific projects for 2018 and 2019

6.1 Ongoing/planned projects

6.2 New projects

6.3 Review and prioritization of projects

27. The Science Manager presented the compiled document on scientific projects (NPFC-2018SC03-WP08 [Rev 1]) that were discussed above and during the SSC meetings.

28. The SC03 reviewed the list of proposed scientific projects and endorsed the revised proposal for consideration by the Commission (Annex).

29. The SC03 noted that the scope of the scientific activities of the NPFC continues and will continue to grow, as illustrated by the intensive schedule of scientific meetings planned for the end of 2018 and the beginning of 2019. In light of this, the SC03 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, or assistance from Members.

Agenda Item 7. 2017-2021 Research Plan and Work Plan

30. The SC03 Chair presented the revised Work Plan (NPFC-2018-SC03-WP07 [Rev 1]).

31. The SC03 reviewed and endorsed the revised Work Plan (Annex), which shall be included in the 2017-2021 Research Plan.

32. In discussions on the Work Plan, the SC03 noted the importance of bycatch issues, in addition to research on target species.

Agenda Item 8. Cooperation with other organizations

8.1 Joint PICES-NPFC Study Group (PICES-NPFC SG)

33. The Co-Chair of the PICES-NPFC SG, Dr. Vladimir Kulik (Russia), presented an update on the intersessional work of the SG, and highlights from recent and future NPFC-PICES cooperative activities. The SG will continue working intersessionally and at the meeting of the PICES-NPFC SG during the annual PICES meeting in 2018.

34. The SC03 recognized the merits of cooperation between the NPFC and PICES for both organizations, and looked forward to hearing the outcomes of the PICES-NPFC SG meeting.

8.2 NPAFC's multinational survey in the North Pacific

35. The Science Manager reported on progress in formulating a plan for the NPFC's participation in the NPAFC's multinational survey in the North Pacific and his attendance at the NPAFC International Year of the Salmon (IYS) Working Group & Cruise Planning Meeting and IYS North Pacific Steering Committee meeting (NPFC-2018-SC03-IP01). The potential benefits from participation in the research survey in the North Pacific for the NPFC include new biological information for priority and other species, particularly North Pacific armorhead and Pacific saury, validation and adjustment of models, and other ecosystem studies.

36. The SC03 expressed support for the scientific cooperation between the NPFC and NPAFC in regard to the IYS initiative, recognized it as a project for 2019 (Annex) and recommended that the Science Manager continue to participate in IYS-related initiatives. The SC03 also recognized the potential for broader cooperation with NPAFC in the future.

8.3 Cooperation with other organizations

37. The SC03 recognized that the cooperation between the NPFC and FAO to hold a VME-related workshop was very rewarding and expressed its appreciation for FAO's support. The SC03 recommended continuing and strengthening cooperation with FAO and other organizations, and actively seeking potential areas from which the NPFC could benefit from their expertise and resources.

Agenda Item 9. Other matters

9.1 Information on resumption of deep water crab fishery

38. Russia reported that its planned resumption of crab fisheries has not yet occurred.

39. The Executive Secretary, Dr. Dae Yeon Moon, informed the SC03 that Ukraine had previously consulted NPFC with respect to its plans to operate crab and other fisheries in the Convention Area but that there have been no developments since then.

9.2 Structure of the Scientific Committee

40. The SC03 did not identify any need to alter the current structure of the SC and its subsidiary bodies at this point in time.

9.3 MCS related issues from SC to TCC

41. Japan informed the SC03 that it has identified misreporting of catch data by two Japanese trawlers for 2016 and previous years, and discovered one vessel that conducted bottom fishing activities in a prohibited area on the Koko Seamount. Japan has imposed maximum sanctions on the vessels in question and detained them in port. Japan will make a more detailed report to the upcoming TCC meeting. Canada noted the prohibited area is closed for potential VME conservation (CMM 2017-05). The details of the event have scientific importance for the NPFC Members, especially location, gear type and bycatch.

42. The SC03 has been engaged in extensive discussions on the scientific aspects of the development of an NPFC observer program (NPFC-2018-SC03-WP03) and encourages the TCC to continue collaboration with the SC with respect to scientific and other data to be collected by at-sea observers.

Agenda Item 10. Advice and recommendations to the Commission

43. The SC informs the Commission that it endorsed the following recommendations made by its SSCs and TWG CMSA:

VME

(a) Endorse the recommendations from the NPFC/FAO VME Workshop as revised by the SSC VME, and adopt the following recommendations (b. - n.) as high priority tasks for the SSC VME. Tasks identified as second priorities will be updated annually as part of the Work Plan.

Data

(b) Review data availability against data requirements from the FAO DSF Guidelines (NPFC2018-WS VME01-WP20), clarify data deficiencies and prioritize actions to fill data gaps.

(c) Continue development of the regional observer program.

(d) Consolidate all available data and potentially relevant information from inside and outside the Convention Area to map VMEs (such as bycatch, scientific surveys and ecological models, fisheries independent surveys, historical literature, data from fishing industry itself, coral drag fishing).

(e) Continue work on the ID guides for VME indicators, data sharing protocols, and central data repository for the NPFC.

Encounter Protocol

(f) Post-encounter requirements – Prepare a quick reporting protocol to avoid multiple impacts on the same VME site, and consider a process to introduce provisional area protection around the encounter location, for example, a box with a set distance around the tow path.

SAI Assessments

(g) Assess SAI by bottom fisheries on any other relevant VME indicator taxa (for example sponges and hydrocorals), in addition to the four existing taxa, and choose taxonomic resolution for VME indicators.

(h) Develop measurable objectives for determining the occurrence of SAI and a standardized approach and metrics to assess the cumulative impact of all Members' bottom fisheries on VMEs through time.

Fishing Footprints

(i) Map a combined fishing footprint and effort to better identify fishing grounds using data from all NPFC Members by gear type and time.

(j) Determine the appropriate scale for collecting and identifying fishing locations to define the fishing footprint in relation to assessing SAI.

Exploratory Fishing Protocol

(k) Consider the following points with respect to avoiding SAIs to VMEs in the course of exploratory fishing:

(i) Review available scientific information (such as distribution models) and conduct reconnaissance for VME in the area to be explored, through fishery-independent surveys, drop-camera deployments from fishing vessels or other low impact sampling prior to fishing, beyond the requirements currently contained in the NPFC regulations.

(ii) Initial exploratory fishing trips should be short to allow for timely assessment of both VME and fishery but at the same time minimizing any SAI.

Spatial Management Measures

(l) Develop management objectives and appropriate measures to protect recovering VME sites.

Other

(m) Assess the recovery of VME sites and monitor the recovery process.

(n) Introduce periodic internal review processes for VME management.

(o) Endorse the updated 2017-2021 SSC VME Work Plan (NPFC-2018-SC03-WP07).

(p) Endorse the updated list of projects from the SSC VME as detailed in NPFC-2018-SC03-WP08.

Bottom Fish

(q) Endorse Japan's proposal for the adaptive management process for North Pacific armorhead in principle, except for measures related to the strength of recruitment, subject to further evaluation of the survey design for capturing the recruitment conditions and decision on management authority for the fishery which shall be presented at the 2019 meeting of the SSC BF or SC.

(r) Endorse the setting of a minimum allowable mesh size (130 mm) for trawl nets to reduce fishing pressure on juvenile splendid alfonsino.

(s) Having no scientific advice with respect to the US proposal (NPFC-2018-SSC BF01-WP01) to ban fishing NPA and splendid alfonsino, defer the proposal to the Commission meeting.

(t) Maintain the wording of the bottom fish-related sections of CMM 2017-06.

(u) Endorse the updated 2017-2021 SSC BF Work Plan (NPFC-2018-SC03-WP07).

(v) Endorse the updated list of projects from the SSC BF as detailed in NPFC-2018-SC03-WP08.

Pacific Saury

(w) Endorse the revised CPUE Standardization Protocol for Pacific Saury.

(x) Recognize the necessity to share data for the Pacific saury stock assessment, and agree that such data should only be treated within the TWG PSSA in accordance with the Interim Guidance for Management of Scientific Data used in Stock Assessments.

(y) Create a joint spatial/temporal map of Members' catch and effort on Pacific saury with a spatial resolution of one-degree grids and a temporal resolution of one month. The Small Working Group on Data Collection Template for Pacific saury will conduct this work.

(z) Move forward in a new direction to aggregate catch and effort data over Member's fishery based on the prototype of the data sharing template (Annex) to draw a single joint CPUE index to resolve different patterns in standardized indices among Members and to increase spatial and temporal coverage of catch and effort data. Share catch and effort data by month and one-degree grids, and conduct a CPUE standardization based on the data after the 2018 SC meeting. Continue to discuss and refine the prototype of the data sharing template.

(aa) Endorse the updated 2017-2021 SSC PS Work Plan (NPFC-2018-SC03-WP07).

(bb) Consider revision of the 2017-2021 Work Plan with regards to detailed processes to enable the TWG PSSA to fulfil its duties more efficiently.

(cc) Endorse the updated list of projects from the SSC PS as detailed in NPFC-2018-SC03-WP08.

(dd) Hold a data preparation meeting in November 2018 for finalizing data sets for CPUE, biomass index, and catch series, and a stock assessment meeting in the first quarter of 2019.

(ee) Initiate the task of setting limit and target reference points and developing harvest control rules in conjunction with managers by commissioning an independent expert to conduct a general literature review of the kinds of target and limit reference points used in pelagic species fisheries by other general RFMOs and fishery management bodies, and holding a workshop on management strategy evaluation, biological reference points and harvest control rules.

(ff) Endorse the data information template for Pacific saury.

Chub Mackerel

(gg) Endorse the TOR for the TWG CMSA.

(hh) Endorse the list of potentially available data for stock assessment of chub mackerel.

(ii) Recognize the necessity to share data for the chub mackerel stock assessment and agree that such data should only be treated within the TWG CMSA in accordance with the Interim Guidance for Management of Scientific Data used in Stock Assessments.

(jj) Endorse the CPUE Standardization Protocol for Chub Mackerel.

(kk) Set the use of an age-structured model as a common goal. Consider four potential models for the chub mackerel stock assessment: a VPA model, a statistical catch-at-age model, a cohort model with Kalman filter, and a state-space production model.

(ll) Endorse the Stock Assessment Protocol for Chub Mackerel.

(mm) Develop the operating model to test the four proposed stock assessment models in accordance with the Stock Assessment Protocol. Conduct an external review of the operating model.

(nn) Adopt the 2017-2021 Work Plan for the TWG CMSA finalized intersessionally by the TWG CMSA members.

44. Based on the above recommendations from its SSCs and TWG CMSA, the SC recommends the following to the Commission:

(a) Endorse the revised Work Plan (Annex).

(b) Endorse the proposed scientific projects (Annex).

(c) Consider revising, based on discussions at the SC03 and SSC VME03, the VME-related sections of CMM 2017-05 and CMM 2017-06 to expand the approved list of NPFC VME indicator taxa to include Hydrocorals and Sponges (Stylasteridae and Porifera) and use the reference term “taxa” to describe the list of indicators, which includes various levels of taxonomic groupings.

(d) Revise CMM 2017-05 to incorporate a minimum allowable mesh size for trawl nets.

(e) Maintain the wording of the bottom fish-related sections of CMM 2017-06.

(f) Consider the proposed measures for bottom fisheries, including adaptive management process and precautionary approach (recommendations q. and s.).

(g) No revisions for CMM 2017-07 For Chub Mackerel and CMM 2017-08 For Pacific Saury.

(h) Take actions, if necessary, to facilitate the sharing of Members' aggregated data for stock assessment and mapping purposes as specified in the Work Plan and Annex, including adopting any revisions made intersessionally by the SC to the Interim Guidance for Management of Scientific Data used in Stock Assessments.

(i) Adopt the regulations for the management of scientific meeting documents, scientific meeting reports and intersessional communications using the NPFC collaboration website (Annex).

(j) Continue to enhance cooperation with PICES, NPAFC and FAO.

(k) Due to the intensive schedule of scientific meetings, consider providing greater support for the Secretariat, through the enhanced capacity of the Secretariat itself, support from external suppliers, or assistance from Members, to ensure efficient conduction of the planned scientific meetings and projects.

(l) Hold the next SC and SSC meetings at a similar timing in 2019.

(m) Hold meetings of the other subsidiary bodies of the SC according to the schedule described in the Annex, subject to further clarification via correspondence.

45. Canada and China made the following statement regarding the NPFC list of VME indicator taxa. The SC03 and SSC VME03 recommended sponges and hydrocorals be assessed for SAIs in the Convention Area, as VME indicator taxa. As per the current CMMs, other VME indicator taxa identified from time to time by the SC require approval by the Commission. Both taxa are found throughout the Convention Area, caught as bycatch and assessed as VME indicators by Members of the NPFC.

46. Japan analyzed using association analysis of the validity of cold-water corals as VME indicator taxa in the Emperor Seamount area from research data in NPFC-2017-SSC VME02-WP02. Based on the result, the NPFC agreed to designate four VME indicator taxa in the Northwestern Pacific Convention Area in CMM 2017-05.

47. Japan and Chinese Taipei made the following statement regarding Pacific saury:

(a) Even though the stock assessment results by the Members show divergence and the SSC PS03 was not able to reach a consensus on the stock status, the declining trend of the stock is obvious, which is supported by the assessment results by the Members and the biomass estimates of the fishery-independent survey. Actual catches by Members' fishing vessels also show a clear decline in the last few years.

(b) Given this clear trend of decline, Japan and Chinese Taipei recommend that the Commission consider a precautionary approach, such as reducing the current fishing mortality, in addition to the restriction of fishing operations in the eastern areas, where juvenile fish are dominant.

48. China expressed its concern over the fact that Japan did not clarify the issue of the frequent changes of its data and Japan did not provide the early period data from 1980 to 1993 for the NPFC. China noted that the current stock assessment was not based on best available data/information because Japan's data are not convincing. Furthermore, China pointed out that Pacific saury is a short-lived species, with its population dynamics more likely regulated by environmental conditions, and the current CMM 2017-08 is sufficient.

49. With respect to the statement made by Japan and Chinese Taipei, Russia informed that according to the document on CPUE standardization (NPFC-2018-SSC PS03-WP08), provided by Russia, there was a significant decline in the CPUE of Russian vessels fishing for Pacific saury in national waters in 2017.

50. The US expressed concern over the declining trends in Pacific saury CPUEs, survey biomass, and catches, and it acknowledges the short life history of Pacific saury may have an impact on the interpretation and implication of these trends. The US hopes that all Members can work together to provide a joint CPUE index for future assessment and come to agreement about a suite of model sensitivity analyses which encompass uncertainty about Pacific saury biomass.

Agenda Item 11. Next meeting

51. The next SC meeting will be held at a similar timing in 2019. The date and location will be notified by the Secretariat via correspondence.

Agenda Item 12. Adoption of the Report

52. The SC03 Report was adopted by consensus.

Agenda Item 13. Close of the Meeting

53. The SC03 closed at 13:20 on 20 April 2018.

Annexes

Terms of Reference for the workshop on the data requirements and data sharing for VME- and BF-related tasks

Terms of Reference for biological reference points (BRPs), harvest control rule (HCR) and management strategy evaluation (MSE) workshop

Template for identification of scientific data which can be collected and/or validated by at-sea observers, fishermen, electronic reporting systems and other means (example based on the Pacific saury data information template)

Regulations for management of scientific meeting documents, meeting reports and intersessional communications on the NPFC website

Scientific projects for 2017-2021

Five-Year SC Work Plan for each priority area identified in the SC Research Plan

Prototype of the template for data sharing for a single joint CPUE index and a spatial/temporal map of Members' catch and effort on Pacific saury

List of SC subsidiary bodies meetings and workshops

Annex

Terms of Reference for the workshop on the data requirements and data sharing for VME- and BF-related tasks

1. To make a data wish list for combined footprint and effort map of all bottom fisheries by gear and time for SAI assessment (SSC-VME issue)
   (a) Fishing ground
   (b) Fishing effort
   (c) Other data
2. To determine minimum data requirements and data resolution for combined SAI assessment
   (a) Review other relevant VME indicator taxa, in addition to the four existing taxa (for example sponges and hydrocorals) and suggest taxonomic resolution for VME indicators
3. To discuss the timely arrangement and aggregation of the bottom fisheries information in relation to the post-encounter requirements (SSC-VME issue)
4. To make a benthic habitat data wish list (SSC-VME issue) and review the data
   (a) Bathymetry data
   (b) To review scientific and fisheries independent survey data to conduct habitat mapping
   (c) To review all other available data and potentially relevant information from inside and outside the Convention Area to conduct habitat mapping
   (d) To review predicative models done by Members
   (e) Recommendation for future work (e.g., consolidation of data)
5. To check the scientific information collected from the monitoring survey (SSC-BF issue)
   (a) The recruitment period and location
   (b) Criteria for the strong recruitment of NPA
6. To make a bycatch data wish list (SSC-BF issue) and review the data
   (a) Review the data collection programme
   (b) Review the flow of the observer reports
   (c) Review the data and measures needed for ID guides
   (d) Recommendation for future work
7. To discuss data collection template (type of data and spatial-temporal resolution)
8. To develop data sharing protocols
9. To review data availability against data requirements from the FAO DSF Guidelines
10. To discuss the creation of a central data repository

Annex

Terms of Reference for biological reference points (BRPs), harvest control rule (HCR) and management strategy evaluation (MSE) workshop

Chair: TBD by the closure of the 2018 Commission meeting

Contact person: Secretariat

Time and venue: March 2019 (1-2 days), in conjunction with TWG PSSA stock assessment meeting

Objectives: To explore BRPs for the managements of the NPFC priority species in the NPFC Convention Area, considering specific characteristics of those species.

1. To review the general concept and best practices of BRP, HCR and MSE
   - ✓ Types of BRPs (target, limit, model-based, empirical)
   - ✓ Types of HCRs commonly used
   - ✓ Standard procedure to conduct MSE

2. To overview outcomes of literature reviews on BRPs and HCR that have been applied to small pelagic fish stock management
   - ✓ Introduction of several case studies

3. To discuss potential directions on application of BRPs, HCR and MSE to the management of NPFC priority species
   - ✓ What management objectives and BRPs are suitable to NPFC situation?
   - ✓ What types of HCR are appropriate for NPFC?
   - ✓ Develop a procedure to determine BRPs with MSE with consideration of uncertainties and life history characteristics of species

Annex

Template for identification of scientific data which can be collected and/or validated by at-sea observers, fishermen, electronic reporting systems and other means (example based on the Pacific saury data information template)

Stick-held-dip net fishing information format - Pacific saury				
#	Items	Example	Data collection	Data validation
1	Vessel flag	KR	*	
2	Vessel name	77Dongnam	*	
3	Vessel call sign (if allocated)	1ABC	*	
4	Vessel Reg No	xxxxxx-xx	*	
5	Lloyd's/ IMO Number (if allocated)	xxxxxxx	*	
6	Light bulb types (traditional/ LED)	traditional	xx	
7	(if traditional bulb) Total light power (kW)	xxx kW	xx	
8	Date of Fishing Activity	14-Apr-18	xx	
9	Fishing position : latitude (DD,MM.mm)	44, 10.10	xx	X
10	Fishing position : longitude (DD,MM.mm)	153, 10.10	xx	X
11	Sea Temperature (°C)	15	v	X
12	Number of haul	3	xx	X
13	Species code (FAO 3-alpha code)	SAP		
14	Retained: Live weight (kg)	3000		X
15	Discarded: Live weight (kg)	0	X	
16	(Bycatch) Species code (FAO 3-alpha code)	OFJ		
17	Retained: Live weight (kg)	0	X	
18	Discarded: Live weight (kg)	10	X	
Biological data - Pacific saury				
1	Sampled location (fleet/port/lab)	fleet	v	X
2	Fishing Date or Fishing position	14-Apr-18	v	X
3	Length (FL,BL,TL in cm)	FL 15		
4	Sex	Male	X	
5	Maturity Stage	Immature	X	
6	Age (if possible)	1	X	

X - data that can ONLY be collected by observers AT SEA; **xx** - data that can be collected by fishermen AT SEA; **v** - data which are preferably collected by observers but a degree of cover can be achieved by other means (in-port collection, EM, ERS etc); ***** - data which can be collected equally well by other means.

Annex

Regulations for management of scientific meeting documents, meeting reports and intersessional communications on the NPFC website

Working Papers, Meeting Info Papers, Information Papers, Reference Documents/Papers, Observer Papers

To enhance and encourage collaborations with researchers, scientists, RFMOs, and science organizations, and to encourage transparency of the NPFC processes, the SC recommends making the above-named documents available to the public through the NPFC website. The default rule would be that all the above-named documents would be released to the public 45 days (inclusive of weekends and holidays) following the closure of the meeting to which they were submitted. If the document author(s) or submitting Member do not authorize the release of the document, they must indicate that clearly on the cover page or first page of the document, OR they may request to the Secretariat in writing of their desire to not release the document during the 44 days prior to document publication on the website.

SC Meeting Reports, SC Subsidiary Body Reports (SSC, TWG) and Other Scientific Reports (Workshop)

1. The SC recommends that the above-named documents be released to the public after acceptance by the Commission in accordance with paragraph 8.2 of Rules of Procedure. Paragraph 8.2 of Rules of Procedure stipulates that the Commission has 45 days to revise and accept the report via correspondence.

2. For SC subsidiary body reports: If there are portions of the report which are deemed by the subsidiary body to be too sensitive to release prior to the SC report, the specific sensitive portions may be redacted, and the report released as described in #1 above. Following the SC meeting, the entire report (inclusive of redacted portions) will be released in conjunction with the SC report. If the report as a whole is deemed too sensitive to release, the report may be held and released to the public in conjunction with the SC Meeting Report. Decisions about which portion or whether the whole report is to be redacted shall be made during the subsidiary body meeting.

Intersessional Communication using the NPFC Collaboration website

The NPFC has made available a web-based tool to facilitate discussion of its subsidiary bodies, informal working groups, discussion groups, and other temporary groups on a project-by-project basis. Access to this tool is restricted to members of a specific project/topic. Following the completion of the discussion, the group facilitator/chair may summarize the discussions to make

them available and accessible to the appropriate Commission body (SCC, SC, Commission). At the conclusion of the discussions of the group and after summary is complete, the discussion text and documents will be archived by the Secretariat but not maintained on the website except for a summary made by the group facilitator/chair.

Redaction or withdrawal of Working Papers, Meeting Info Papers, Information Papers, Reference Documents/Papers, Observer Papers which were submitted to workshop or meeting

Documents of the types listed above may not be redacted or withdrawn from the public or Member only area of the website by a Member or the Secretariat once it has been published unless notification is provided to all Members which details the reason for the withdrawal request. If an error is identified in a publicly available document, the member responsible for the document submission can submit a cover letter or document text which describes the error and the resolution to be prepended to the original document. Errors identified in documents prior to publication on the public website or during meetings or workshops can be revised or documents withdrawn before or during the meeting.

Annex

Scientific projects for 2017-2021

#	Project	Time	Status	Next step: activities, required funds
1	NPFC/FAO VME workshop	2018	**Concluded.** Report to FAO is in progress.	The FAO report will be finalized by the co-chairs and published as FAO Fisheries and Aquaculture report. *No funds required. All costs will be covered by FAO.*
2	VME identification guide	2017-2020	*In progress* VME ID group had an informal meeting in March 2018 to discuss plan for implementation of the project.	Review other RFMOs id guides and finalize the format; Collect all images on the designated web drive. *2018 FY: No funds required.* *2020: printing costs TBD.*
3.1	GIS database/module as a part of NPFC database management system for spatial management of bottom fisheries and VMEs	2018-2019	*In progress* Spatial extensions have been included in data management system; PostGIS data warehouse and instance of GeoServer have been set up; Map of CA, fished seamounts and closed areas on website.	Improvement of the interface of the map on the website and the way of accessing of database; Informal small working group will work intersessionally to specify further steps. *2018 FY: 7,220USD carried over from 2017 FY SC budget.*
3.2	Joint spatial/temporal map of Members' catch and effort on Pacific saury with a spatial resolution of one-degree grids and a temporal resolution of one month (by Small Working Group)	2018-	*Proposed.*	*2018 FY: 0.5 mln JPY (~5,000USD).* *Source: SC fund.*

4	TWG PSSA meeting (meeting costs)	Every year, 2017-2021	*TWG CMSA01 meeting was held in Dec 2017.*	Data preparation meeting, Nov 2018 (4 days), China. *2.2mln JPY (20,000USD)** *Source: SC fund.* Stock assessment meeting, Mar 2019 (4 days), Japan. *2.2mln JPY (20,000USD)** *Source: SC fund.*
5	TWG CMSA meeting (meeting costs)	Every year	*TWG PSSA meeting was held in Dec 2017.*	Mar 2019 (3 days), Japan *2.2mln JPY (20,000USD)** *Source: SC fund.*
6	Workshop to address data requirements and data sharing for SAI assessment and other tasks identified in the Work Plan by SSC VME and SSC BF	2018	*Proposed.*	Nov 2018 (4 days), China. *2.2mln JPY (20,000USD)** *Source: SC fund.*
7	Workshop on biological reference points (RP), harvest control rule (HCR) and management strategy evaluation (MSE) (meeting costs and invited experts)	2019	*Proposed.*	Mar 2019 (2 days), Japan *2.2mln JPY (20,000USD)** *Source: SC fund.*
8	Expert to review Pacific saury stock assessment (consultant fee and travel cost)	TBD later	Under consideration. SSC PS: to determine time and format.	*2018 FY: No funds required.*
9	Observer Program	2018-	*In progress* A study on the existing observer programs of Members and those of other RFMOs has been done.	Identify data gaps which can be fulfilled by an observer program. *2018 FY: No funds required.*
10	Literature review of target and limit reference	2018	*Proposed.*	By Sep-Oct 2018 *2018 FY: 1.1 mln JPY*

	points used in pelagic species fisheries by other general RFMOs and other fishery management bodies			*(10,000USD)* *Source: SC fund.*
11	Promotion of cooperation with NPAFC including macro-scale multinational survey in the North Pacific in 2020	2019	*Proposed*.	*TBD.*
12	External review of the operating model for chub mackerel stock assessment	2020	*Proposed*.	*2018 FY: No funds required.*

* * the required funds may be lower as some meetings will be held in conjunction to each other.

Annex

Five-Year SC Work Plan for each priority area identified in the SC Research Plan

1. STOCK ASSESSMENTS FOR TARGET FISHERIES AND BYCATCH SPECIES

PACIFIC SAURY

Year	Tasks	Progress/Comment	Meeting/Activity
2017	Conduct stock assessment (provisional).	Done.	TWG PSSA01, Feb 2017; SSC PS02 Apr 2017.
	Present outputs for adoption	Done. *SC was tasked to improve PSSA by July 2018.*	SC02 meeting, Apr 2017; COM03 meeting, Jul 2017.
	Update the provisional stock assessment.	In progress.	TWG PSSA02, Dec 2017.
2018	Evaluate the quality of the data for stock assessment.	In progress.	Intersessional work; SSC PS03, Apr 2018.
	Update stock assessment and recommendations to Commission to improve conservation and management of Pacific saury.	In progress.	SSC PS03, Apr 2018.
	Present outputs for adoption		SC03 meeting, COM04 meeting
	Initiate the task of setting limit and target reference points and develop harvest control rules in conjunction with managers		Intersessionally: literature review, by Sep-Oct 2018.
	Data preparation to finalize data set for BSSPM/try to draw a joint CPUE index		TWG PSSA03, Nov 2018.

2019	Joint spatial/temporal map of Members' catch and effort on Pacific saury Continue setting limit and target reference points, harvest control rules and management strategy evaluation in conjunction with managers Update/ benchmark stock assessment and recommendations to Commission to improve conservation and management of Pacific saury.		Intersessionally. Workshop, Mar 2019. TWG PSSA04, Mar 2019. SSC PS04, Apr 2019.
2020	Update/ benchmark stock assessment and recommendations to Commission to improve conservation and management of Pacific saury		
2021	Update/ benchmark stock assessment and recommendations to Commission to improve conservation and management of Pacific saury		

Objectives and timelines of the 3rd and 4th TWG PSSA meetings

TWG PSSA03 (4 days)

- 1st priority task: Update CPUE and biomass indices
    1. submit reports on CPUE standardization and biomass indices: 1 month before the meeting
    2. finalize abundance indices: during the meeting
- 2nd priority task: Draw a single joint CPUE index
    1. consider revision of the prototype template and share views and suggestions: 4 months

before the meeting

2. finalize the template for data sharing: 3 months before the meeting
3. submit full data set including 2017 based on the template: 1 month before the meeting
4. finalize single joint CPUE index: during the meeting

- Discuss literature review of the TRPs and LRPs.

TWG PSSA04 (4 days)

1. submit stock assessment report: 1 month before the meeting
2. finalize/update stock assessment: during the meeting

CHUB MACKEREL

Year	Tasks	Progress/Comment	Meeting/Activity
2017	Review of Members' national research on stock status and fisheries Establishment of TWG CMSA Development of TORs, Work Plan and Data List	Done Done/Adopted by the Commission TORs are done. Work Plan and Data List are in progress.	Chub mackerel workshop, 16-17 Feb SC02 meeting (proposal), COM03 meeting Proposal at the 3rd Commission meeting; Intersessional work on the TORs; TWG CMSA meeting, 4-5 Dec
2018	Report outputs by TWG CMSA01 Discussion of the framework for the operating model, list of data required for SA	 In drafting a protocol for the development of the operating model and selection of the best SA model	SC03 meeting, COM04 meeting; Intersessional

2019	Data preparation and data sharing for scientific SA/ CPUE standardization/ show results of the intersessional work on the operating model (OM) and organize the OM structure/ proposal of SA model candidates Development and conditioning of OM Present outputs by TWG to SC Show the progress on the OM and agree the OM/ Finalize the data used for the SA		TWG CMSA02, Mar 2019. Intersessional SC04 meeting, COM05 meeting; TWG-CMSA03
2020	External review of the OM if needed/ Determine the final OM/ Compare SA model candidates and choose the best SA model Preliminary SA with the selected model(s) and provision of advice and recommendations to the SC Present outputs by TWG to SC with emphasis on management advice from the preliminary SA		Intersessional TWG CMSA04 SC05 meeting, COM06 meeting;
2021	Update/Improvement of the assessment and provision of advice and recommendations to the SC Present outputs by TWG to SC with emphasis on management advice		TWG CMSA05 SC06 meeting, COM07 meeting;

Detailed work plan for the operating model development

2018

1. Identification of all available data
2. Specification of objectives and determination of performance measures
3. Discussion of the framework for the operating model (OM)
   (a) Draft a protocol for the OM development
   (b) Specification of model structure
      (i) Important biological processes to be incorporated into the OM
      (ii) Specification of uncertainties to be incorporated in the OM
      (iii) Population dynamics model/data-generating model
      (iv) Determine the population and fishing constant (mortality, fertility, growth, maturation, catchability)
      (v) The method for conditioning the data (what parameters are estimated or not?; what data are used for conditioning?)
      (vi) Develop a flowchart for OM
4. Present the progress and organize the structure of the OMs [TWG CMSA02]
5. Identification and collection of required data [TWG CMSA02]

2019

6. Select the computer code and write a script program
7. Conditioning the OMs on data
8. Setting of scenarios (reference case(s) and sensitivity case(s))
9. Agreement of the OMs [TWG CMSA03]
10. Finalize the data used for the stock assessment [TWG CMSA03]

2020-

11. External review of the OMs if needed
12. Determine the final OMs
13. Compare stock assessment model candidates according to the pre-determined performance measures and choose the best SA model from the candidates

SPOTTED MACKEREL, JAPANESE SARDINE, NEON FLYING SQUID AND JAPANESE FLYING SQUID

Year	Tasks	Progress/Comment	Meeting/Activity
2017			
2018	Collect data and monitor situation for further analyses		
2019	Collect data and monitor situation for further analyses		
2020	Collect data and monitor situation for further analyses		
2021	Collect data and monitor situation for further analyses		

NORTH PACIFIC ARMORHEAD

Year	Tasks	Progress/Comment	Meeting/Activity
2017	1. Adopt Adaptive Management process 2. Develop work plan to implement the Adaptive Management process 3. Assess and monitor the status of the stock 4. Conduct acoustic survey and other affiliated research	In progress. *COM03 requested further work on the Adaptive Management process.*	SC02 meeting, Apr 2017; COM03 meeting, Jul 2017.
2018	1. Develop harvest control rules to conserve stock 2. Assess and monitor the status of the stock 3. Review data requirements and identify data gaps 4. Conduct affiliated research	In progress. In progress. In progress.	SSC BF01, Apr 2018. SSC BF01, Apr 2018. SSC BF01, Apr 2018. Data workshop, Nov 2018

2019	1. Improve adaptive management plan and implement harvest control rules 2. Assess and monitor the status of the stock 3. Review data requirements and identify data gaps 4. Conduct acoustic survey and other affiliated research		SSC BF02
2020	1. Review monitoring and survey designs 2. Assess and monitor the status of the stock 3. Conduct acoustic survey and other affiliated research		SSC BF03
2021	1. Evaluate Adaptive Management process and refine harvest control rules 2. Assess and monitor the status of the stock 3. Conduct acoustic survey and other affiliated research		SSC BF04

SPLENDID ALFONSINO

Year	Tasks	Progress/Comment	Meeting/Activity
2017	No tasks.		
2018	1. Review monitoring and assessment of the stock 2. Review data requirements and identify data gaps 3. Conduct affiliated research	Done. In progress.	SSC BF01, Apr 2018. SSC BF01, Apr 2018. Data workshop, Nov 2018.
2019	1. Conduct comprehensive stock assessment 2. Adopt Adaptive Management process		SSC BF02

2020	1. Develop harvest control rules and management advice		SSC BF03
2021	1. Assess and monitor the status of the stock 2. Conduct affiliated research		SSC BF04

2. ECOSYSTEM APPROACH TO FISHERIES

Year	Tasks	Progress/Comment	Meeting/Activity
2017	Review Encounter protocol and Exploratory fishing protocol, Revise CMMs 2017-05 and 06	Done	SSC VME02
2018	Address data, knowledge, performance, gaps and identify further steps to improve our assessments and protection of VMEs in the Convention Area Develop ID guides for VME indicators Determine minimum data requirements and data resolution for combined SAI assessment, review data availability, and consolidate the data required; Contribute to data sharing protocols and creation of a central data repository	Done. In progress	NPFC/FAO VME workshop; SSC VME03. Intersessional meeting, March 2018; further intersessional work Intersessional communication** Data workshop, Nov 2018
2019	Map a combined fishing footprint and effort Refine the exploratory fishing protocol and consider banning exploratory fishing in VME closed areas		SSC VME04

	Development of standardized approach for SAI assessments Refine the encounter protocol in necessary Develop management objectives for recovering VME sites Develop timely reporting and action protocol when VME sites or recovering sites are identified. ID guides for VME indicators: 1. finalize the format and collect all images on the designated web drive 2. Update the format by the discussion from the SSC and review the image & id with other coral taxonomists.		1. SSC VME04 2. Intersessionally
2020	Apply the standardized approach for SAI assessments and conduct integrated SAI assessment Refine the encounter protocol if necessary ID guides for VME indicators: Complete editing the id guide and test it out by observers and fishers.		SSC VME05
2021	Introduce periodic internal review processes for VME management ID guides for VME indicators: Revisit taxonomy according CMM updates and finalize the id guide.		SSC VME06

**Lead: Cherisse Du Preez (Canada)

3. DATA COLLECTION, MANAGEMENT AND SECURITY

DATA STANDARDS

Year	Tasks	Progress/Comment	Meeting/Activity
2017	Finalize data collection templates Pacific saury and continue development for bottom fisheries (trawl, gillnet, longline)	Presented and discussed. Done for Pacific saury. Others in progress.	SSC PS02 & SC02 meetings, Apr 2017. Intersessional work by SWGs.
2018	Develop data collection templates for chub mackerel, squid and crab fisheries	In progress.	SSC BF01, SC03 meetings.
2019	Complete data collection templates for bottom fish, chub mackerel, squid and crab fisheries		
2020	Revision of data collection templates if necessary		
2021	Revision of data collection templates if necessary		

DATA COLLECTION

Year	Tasks	Progress/Comment	Meeting/Activity
2017	Identifying data needs and data gaps	In progress.	SSCs & SC02 meetings, Apr 2017; TWGs CMSA&PSSA meetings, Dec 2017.
2018	Identifying data needs and data gaps; Enhancement of data collection: fisheries, surveys, Observer program	In progress. In progress. *Review of the existing observer programs of Members and those of other RFMOs is completed.*	VME workshop, Mar 2018 SC03 meeting.

2019	Identifying data needs and data gaps; Enhancement of data collection: fisheries, surveys, Observer program	In progress. *Identification of scientific data which can be collected and/or validated by at-sea observers, fishermen, electronic reporting systems and other means.*	Intersessional work. SC04.
2020	Identifying data needs and data gaps; Enhancement of data collection: fisheries, surveys, Observer program		
2021	Identifying data needs and data gaps; Enhancement of data collection: fisheries, surveys, Observer program		

DATA SECURITY

Year	Tasks	Progress/Comment	Meeting/Activity
2017	Information Security Guidelines	In progress. *Development of the Information Security Guidelines (ISG) for both SC and TCC.* In progress. *Adoption of the Interim Guidance for Management of Scientific Data Used in Stock Assessments*	SC02 meeting, Apr 2017; Intersessional work by the SWG. COM03meeting, Jul 2017.
2018	Prioritization of areas of the Information Security and Management System and development of Information Security and Management regulations	In progress.	SC03 meeting

2019	Adoption of Information Security and Management regulations		
2020	Improvement of Information Security and Management regulations if necessary		
2021	Improvement of Information Security and Management regulations if necessary		

Annex

Prototype of the template for data sharing for a single joint CPUE index and a spatial/temporal map of Members' catch and effort on Pacific saury

Member	Year	Month	Duration Month Early Middle Late Date	Center of grid		Mesh size of Grid	Catch amount (metric ton)	Effort		Remarks	Estimated catch by ages (N. Individuals)		Measurement length select (FL, TL, KnL, BL)	Estimated catch by length class in each 1cm (N. Individuals)																												
				Latitude (°N)	Longitude (°E)			Total operation days for all vessels	Total net hauls for all vessels		Age-0	Age-1		<15	15≤	16≤	17≤	18≤	19≤	20≤	21≤	22≤	23≤	24≤	25≤	26≤	27≤	28≤	29≤	30≤	31≤	32≤	33≤	34≤	35≤
Japan	2019	Oct.	Early	36.30	141.30	0.5°	348	11	105	Example	3,265	641,993	KnL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,453	######	######	######	######	0	0	0
Japan	2019	Oct.	Month	37.30	141.30	1.0°	2,425	98	968	Example	258,504	3,711,067	KnL	0	0	0	0	0	17,725	0	0	0	######	2,092	######	######	######	######	######	######	######	######	0	0	0
Japan	2019	Oct.	Month	37.30	142.30	1.0°	4,437	138	1,170	Example	52,193	1,093,407	KnL	0	0	0	0	0	0	0	0	0	0	0	0	######	######	######	######	######	######	######	###	0	0
Japan	2019	Oct.	Month	37.30	141.30	1.0°	6,253	498	5,526	Example	45,912	1,997,132	KnL	0	0	0	0	0	0	0	0	0	0	4,339	0	27,293	0	39,023	######	######	######	95,128	0	0	0
Japan	2019	Oct.	Month	38.30	142.30	1.0°	964	22	146	Example	290,628	1,138,466	KnL	0	0	0	0	#######	13,741	0	0	41,224	13,741	0	27,483	68,706	68,706	######	######	######	######	27,483	0	0	0
Japan	2019	Oct.	Month	39.30	142.30	1.0°	1,576	30	350	Example	110,008	2,326,253	KnL	0	0	0	0	0	0	0	0	0	0	0	0	36,487	12,162	######	######	######	######	83,507	0	0	0

Required item
If possible

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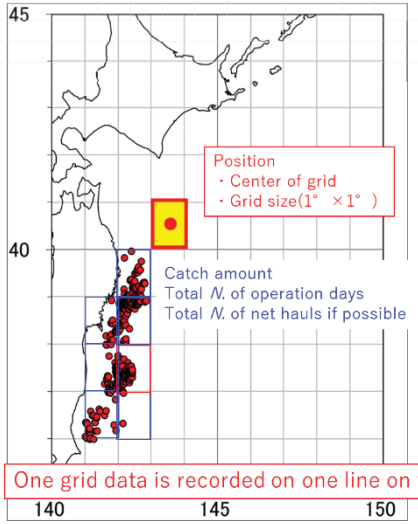

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Annex

List of SC subsidiary bodies meetings and workshops

Meeting	Date and place	Host Member
VME&BF DATA WS (3 days)	7-9 November, Xiamen	China
TWG PSSA03 (4 days)	12-15 November, Xiamen	China
BRP/HCR/MSE WS (1-2 days)	4-5 March 2019, Yokohama	Japan
TWG PSSA04 (4 days)	6-9 March 2019, Yokohama	Japan
TWG CMSA02 (3 days)	27 Feb - 1 Mar 2019,Yokohama	Japan
SSCs VME04, BF02, PS04, SC04	15-26 April 2019, TBD	Korea

3rd Meeting of the Technical and Compliance Committee

28-30 June 2018
Tokyo, Japan
Meeting Report

3rd Meeting of the Technical and Compliance Committee

Agenda

Agenda Item 1. Opening of the Meeting

Agenda Item 2. Appointment of Rapporteur

Agenda Item 3. Admission of Observers

Agenda Item 4. Adoption of Agenda

Agenda Item 5. Progress Report on TCC Work Plan

- 5.1 Brief Overview of North Pacific Fisheries
- 5.2 Chair's Presentation on intersessional work on the TCC Work Plan 2017-2018
  - 5.2.1 SWG Vessel Registry
    - a. Online Vessel Registry
    - b. Vessel Marking and Identification
  - 5.2.2 SWG VMS
    - a. VMS Options
  - 5.2.3 SWG Assessing Compliance
    - a. CMM Chart of Accounts
    - b. NPFC Conservation and Sustainable Use Handbook
    - c. High Seas Boarding and Inspection Implementation Plan

Agenda Item 6. Review of MCS related issues from SC

- 6.1 Observer Program
- 6.2 Other Issues from SC

Agenda Item 7. Review of Current CMMs

7.1 CMM 2016-01 - Vessel Registry

7.2 CMM 2017-02 – IUU

a. Review Current NPFC IUU Vessel List

b. Review Draft IUU Vessel List – Provisional NPFC IUU Vessel List

7.3 CMM 2016-03 – Interim Transshipment Procedures

7.4 CMM 2016-04 – Vessels with No Nationality

7.5 CMM 2017-05 – Bottom Fisheries and VME Protection NW Pacific Ocean

a. Status of the proposal of crab fishery – Russia and Ukraine

7.6 CMM 2017-06 – Bottom Fisheries and VME Protection NE Pacific Ocean

7.7 CMM 2017-07 – Chub Mackerel

7.8 CMM 2017-08 – Pacific saury

7.9 CMM 2017-09 – High Seas Boarding and Inspection

Agenda Item 8. New MCS-related CMMs and Issues

Agenda Item 9. Compliance Work Plan and Priorities

9.1 Forward-looking work plan priorities, projects and budget planning

9.2 Summary of SWG Recommendations for the TCC Work Plan

Agenda Item 10. Data management and security

10.1 Data management and reporting

a. Annual Reporting Format (Science vs. Compliance data: e-reports)

10.2 Information security regulations (Canada, USA)

10.3 Data Management and the Way Forward

Agenda Item 11. Other Matters

Agenda Item 12. Recommendations to the Commission

Agenda Item 13. Next Meeting

Agenda Item 14. Adoption of the Report

Agenda Item 15. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of Meeting

1. The 3rd Meeting of the Technical and Compliance Committee (TCC) took place in Tokyo, Japan on 28-30 June 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and Vanuatu. The meeting was opened by Dr. Robert Day (Canada) who served as the TCC Chair.

2. Dr. Toshio Takeuchi, President of Tokyo University of Marine Science and Technology (TUMSAT), offered opening remarks. Dr. Takeuchi welcomed the participants to Tokyo and expressed TUMSAT's honor to be hosting the North Pacific Fisheries Commission's (NPFC) Secretariat office and this meeting of the TCC. Furthermore, he expressed TUMSAT's support for the activities of the NPFC and his appreciation for the achievements of the NPFC to date. Finally, he wished for fruitful discussions and the success of the meeting.

Agenda Item 2. Appointment of Rapporteur

3. Mr. Alexander Meyer was appointed as the Rapporteur.

Agenda Item 3. Admission of Observers

4. The Chair listed approved observers present. The meeting was attended by the North Pacific Anadromous Fish Commission and the Organization for Regional and Inter-regional Studies of Waseda University of Japan. The Deep Sea Conservation Coalition and the European Union were registered as observers but did not attend the meeting. The observers were admitted without objection.

Agenda Item 4. Adoption of Agenda

5. The Secretariat requested the addition of Agenda Item 10.3 for the discussion of NPFC-TCC-2018-IP03 on existing and planned data management systems and the way forward.

6. Canada suggested that Agenda Item 7.1, the review of CMM 2016-01 on Vessel Registry, be conducted under Agenda Item 5.2.1.

7. The above requests were approved and the revised agenda was adopted.

Agenda Item 5. Progress Report on TCC Work Plan

5.1 Brief Overview of North Pacific Fisheries

8. The Secretariat presented a brief overview of the NPFC fisheries addressing each fishery (NPFC-2018-TCC03-IP01 [Rev 2]). The Secretariat highlighted the following key issues requiring the consideration of the TCC03:
   (a) Implementation of the adaptive management approach for North Pacific armorhead and potential interim measures before adaptive management is implemented
   (b) Growing attention paid to transshipment monitoring due to the potential for illegal, unreported and unregulated fishing activity
   (c) The effectiveness of current effort limitation indicators
   (d) Further decisions on preliminary Pacific saury assessment results
   (e) Methods to better monitor fishing and transshipment activities

   Recommendation: The TCC recommended to the Commission the need for the development of better indicators of fishing effort.

9. Japan provided further clarification on the incident involving the misreporting of catch data by two bottom trawlers, which it initially reported to the 3rd Scientific Committee (SC) meeting (NPFC-2018-TCC03-IP06). Japan has scrutinized the data and revised its annual report with the correct information. In addition, Japan has temporarily detained the two bottom trawlers in port and taken preventive measures including imposing maximum sanctions on the vessels in question, obliging trawlers to provide cold storage certificates for each landing, conducting random inspections of landings by bottom trawlers, and closely monitoring the locations of bottom trawlers with a vessel monitoring system (VMS).

10. Upon comparing the catch data before and after the revision of Japan's annual report, the United States noted that there was greater catch than was originally thought and that the management implications should be further discussed at the Commission meeting. Japan suggested that this could be considered as part of discussions at the Commission meeting on the adaptive management approach proposed by Japan.

11. Japan expressed concern over the fishing effort for Pacific saury and chub mackerel. Japan suggested the need to understand the number of vessels authorized to fish these species, and to revise CMM 2017-07 and CMM 2017-08 to require Members to report this information.

12. Japan pointed out that while the NPFC has measures to control and monitor transshipment activities, they are less robust than those of other regional fisheries management organizations (RFMOs) and noted the need to strengthen measures to control and monitor transshipment activities.

5.2 Chair's presentation on intersessional work on the TCC Work Plan 2017-2018

13. The Chair gave an introductory presentation on the intersessional work on the TCC work plan.

5.2.1 SWG Vessel Registry

(a) Online Vessel Registry
(b) Vessel Marking and Identification

14. Canada provided an update on the intersessional work of the TCC Small Working Group on Vessel Registry (SWG VR). The vessel registry system is now online and operational. The SWG VR has also drafted an options paper for vessel marking and identification, recommending the *FAO Standard Specifications for the Marking and Identification of Fishing Vessels* and IMO number acquisition for all eligible vessels.

Recommendation: The TCC recommended that the Commission encourage all Members to use the online vessel registry system as soon as possible.

Recommendation: The TCC recommended that the Commission adopt the FAO Standard Specifications for the Marking and Identification of Fishing Vessels including the unique identifier of IMO number (Proposed CMM 2018-01).

15. Canada outlined the changes that the SWG VR has proposed to CMM 2016-01, explaining that they are aimed at incorporating the recommended marking and identification scheme, reflecting Member and non-Member carrier vessel amendments, and enhancing vessel registration information requirements. Japan also explained its proposed changes to the proposed CMM 2018-01, which are aimed at reflecting practical considerations and the need to further discuss the chartering of Member carrier vessels.

Recommendation: The TCC recommended to the Commission that there is a need to hold further discussions on Member and non-Member carrier vessels, the chartering of fishing vessels and other details of CMM 2016-01 as an element of the TCC work plan.

16. Chinese Taipei noted that the Interim Register will expire in 2019 and requested that the Secretariat contact non-Members with carrier vessels on the Interim Register and encourage them to complete procedures for becoming Cooperating non-Contracting Parties (CNCPs).

5.2.2 SWG VMS

(a) VMS Options

17. Canada provided an update on the intersessional work of the TCC Small Working Group on Vessel Monitoring System (SWG VMS; NPFC-2018-TCC03-WP06), explaining that the SWG VMS has reviewed requirements for a regional VMS and drafted a Synopsis of TCC Framework Requirements for a Regional VMS for discussion at TCC. Japan provided an overview of the draft Synopsis of TCC Framework Requirements for a Regional VMS (NPFC-2018-TCC03-WP07 [Rev 1]), highlighting the importance of VMS to achieve the management objectives of the NPFC and the need for further discussion on management objectives, particularly the frequency of data provision.

Recommendation: The TCC recommended that the Commission endorse the continuation of the work of SWG VMS to develop and plan the implementation of a regional VMS as per the existing work plan to be presented to the 4th TCC meeting.

Recommendation: The TCC recommended that the Commission task the SWG VMS to propose a regional VMS system to the 4th TCC meeting that will include data-sharing and data-security protocols, technical specifications and resource requirements to implement, operate and maintain the system. The TCC recommended that the Commission task the Secretariat to hire a consultant based on selection criteria determined by the SWG VMS to develop a detailed regional VMS design and implementation plan proposal under the guidance of the SWG VMS.

Recommendation: The TCC recommended that the Commission request that Members make participants available with the necessary technical expertise on VMS and knowledge of each fishery to participate in the work of the SWG VMS.

Recommendation: The TCC recommended that the Commission endorse the development of data-sharing and data-security protocols by TCC, SC and Finance and Administration Committee (FAC) to ensure the secure handling and confidentiality of the data.

Recommendation: The TCC recommended to the Commission that there is a need to take into account overlapping jurisdictions with other RFMOs and ensure compatibility with Members' existing VMS systems.

5.2.3 SWG Assessing Compliance

(a) CMM Chart of Accounts
(b) NPFC Conservation and Sustainable Use Handbook
(c) High Seas Boarding and Inspection Implementation Plan

18. Canada provided an update on the intersessional work of the TCC Small Working Group on Assessing Compliance (SWG AC). The SWG AC has made preliminary progress in identifying reporting requirements for the CMM Chart of Accounts and has noted a desire among Members to prioritize compliance reviews. The SWG AC has also drafted the structure of the NPFC Conservation and Sustainable Use Handbook (NPFC-2018-TCC03-WP08). Furthermore, the SWG AC has drafted the High Seas Boarding and Inspection (HSBI) Implementation Plan (NPFC-2018-TCC03-WP09).

Recommendation: The TCC recommended that the Commission endorse the continuation of the work of the SWG AC on the CMM Chart of Accounts to incorporate non-compliance/sanctions into the MCS scheme and follow-up reporting by Members on non-compliance issues.

Recommendation: The TCC recommended that the Commission task the SWG AC with updating the NPFC Conservation and Sustainable Use Handbook to include information on sanctions, aiming to finalize and publish it between the fourth and fifth Commission meetings.

Recommendation: The TCC recommended that the Commission adopt the proposed HSBI Implementation Plan (Annex).

Recommendation: The TCC recommended that the Commission adopt the NPFC Inspection Flag design as presented in the HSBI Implementation Plan (including a boarding pennant).

Recommendation: The TCC recommended that the Commission task the Secretariat with determining the shape and measurements of the flags for inspection vessels.

Recommendation: The TCC recommended that the Commission task the Secretariat to develop and maintain an Inspection Vessel and Authority Registry and publish it online. Furthermore, the authorized inspection vessels and related authorities (including inspectors and inspector trainees where applicable) can only commence NPFC HSBI duties 60 days after the Secretariat posts its details on the NPFC public webpage (to inform Members and fishing Masters of the authorization of the inspection vessel).

Recommendation: The TCC recommended that the Commission task the Secretariat to provide inspection vessels with the NPFC Inspection Flag (and pennants where appropriate), publish the related authorized vessel information and the sample inspection personnel ID cards on the NPFC website, and provide a copy of the relevant CMMs active in the Convention Area to the authorized Compliance Authority for each of the authorized inspection vessels within 30 days of the approval of the Inspection Vessel Registration Form.

Recommendation: The TCC recommended that the Commission task the SWG AC to prioritize the completion of a first draft of an NPFC Handbook to support, *inter alia*, boarding and inspections and include information on active CMMs and other relevant compliance and enforcement information.

Recommendation: The TCC recommended that the Commission adopt the letterhead entitled "Notification to the NPFC of Intention to Carry out Boarding and Inspection Activities" and related "NPFC Inspection Vessel Registration Form" for registering inspection vessels and authorities and supporting online registry information public posting requirements.

Recommendation: The TCC recommended that the Commission adopt the standardized NPFC Boarding and Inspection Form and related Standardized Multilingual Questionnaire in English and for translation by Members.

Recommendation: The TCC recommended that the Secretariat develop and maintain a list of vessels identified pursuant to paragraph 43 of CMM 2017-09 in support of monitoring fishing vessel activities of non-Members in the CA.

Recommendation: The TCC recommended that the TCC establish a Small Working Group on Operational Enforcement pursuant to paragraph 48 of CMM 2017-09.

Recommendation: The TCC recommended that the Commission task the SWG to explore the utility of a Standard Violation Case Package to support standardized data collection and reporting protocols from high seas boardings and inspections.

Recommendation: The TCC recommended that the Commission task the TCC to clarify which elements of the revised Annual Report should be subject to certain data handling provisions given potential sensitivities of the data.

Recommendation: The TCC recommended that the NPFC Annual Report template be updated by the Secretariat to reflect the information security requirements of the revised Annual Reports and related data.

Agenda Item 6. Review of MCS-related Issues from SC

6.1 Observer Program

19. The Secretariat presented a report on the existing observer programs of NPFC Members and those of other RFMOs (NPFC-2018-SC03-WP03 [Rev 1]). The Secretariat also explained that the SC is examining which data could only be obtained through an observer program, based on which it will make a recommendation regarding whether or not a regional observer program is necessary and, if so, for which data and which fisheries.

Recommendation: The TCC noted that other RFMOs' observer programs are primarily set up for science and recommended that the Commission request the SC to further discuss observer programs for all fisheries and that different observer coverages be considered for each fishery based on further discussion at SC.

Recommendation: The TCC recommended to the Commission that there is a need and desire among Members to continue to consider the compliance components of an observer program.

6.2 Other Issues from SC

20. The Secretariat presented the regulations proposed by the SC for the management of scientific meeting documents, meeting reports and intersessional communications on the NPFC website, and requested that the TCC consider whether there would be merit in having a common standard throughout the Commission for the management of such documents (NPFC-2018-TCC03-WP01 [Rev 1]).

    Recommendation: The TCC recommended that TCC contribute to the SC proposal on the release of documents approach and that the Commission request FAC to further discuss and endorse the proposal for Commission approval.

    Recommendation: The TCC recommended to FAC that access to documents by CNCPs be addressed the same as for Members.

    Recommendation: The TCC recommended that the Commission hold further discussion with respect to the release of documents to observers.

Agenda Item 7. Review of Current MCS-related CMMs

7.1 CMM 2016-01 - Vessel Registry

21. The TCC reviewed and revised CMM 2016-01 (NPFC-2018-TCC03-WP02; NPFC-2018-TCC03-WP10).

    Recommendation: The TCC recommended that the Commission adopt the revised CMM 2016-01 as CMM 2018-01.

    Recommendation: Noting the need to enable Members to authorize vessels to start fishing activities in a timely manner, the TCC agreed on a proposed list of initial vessel data requirements for inclusion in the proposed CMM 2018-01, but recommended that the Commission task the TCC to hold further discussions on other data elements required for compliance and vessel identification and the timeline for the submission of such data taking into account the NPFC Convention requirements.

22. Regarding fishing methods, the TCC noted that, in addition to the FAO classification, Members may add further sub-classification information where appropriate.

23. The TCC highlighted the importance on vessels acquiring an IMO number where appropriate.

7.2 CMM 2017-02 – IUU

(a) Review Current NPFC IUU Vessel List

(b) Review Draft IUU Vessel List – Provisional NPFC IUU Vessel List

24. The Executive Secretary, Dr. Dae Yeon Moon, reported on the IUU listing Process for 2018. (NPFC-2018-TCC03-IP02; NPFC-2018-TCC03-WP03)

25. Japan presented its AIS observations of four suspected IUU vessels in the NPFC Convention Area (NPFC-2018-TCC03-IP05) and those suspected IUU vessels have been operating based in China. Japan requested that China further look into the situation regarding suspected IUU vessels utilizing AIS information and port entry records.

26. China noted that the AIS data might not be accurate due to the practice of IUU vessels frequently altering their AIS systems. China indicated that it has taken every effort, including port measures, to combat IUU activities in accordance with its national laws. China will continue its efforts by cooperating with other Members of the NPFC.

27. The United States suggested that submissions to the draft IUU list should include the provisions of the relevant CMM alleged to have been violated and relevant evidence so as to ensure greater alignment with the relevant CMMs.

28. The TCC requested that the Secretariat add MMSI information to the current IUU vessel list, where applicable.

29. The TCC reviewed the draft NPFC IUU vessel list for 2018 (NPFC-2018-TCC03-WP04).
Recommendation: The TCC recommended that the Commission adopt the draft NPFC Provisional IUU vessel list.
Recommendation: The TCC recommended that the Commission task the TCC to update the format of the NPFC Provisional IUU vessel list to include the relevant CMMs.

30. The TCC requested that China and Japan report to the Commission on the sanctions they have imposed on non-compliant vessels in their jurisdiction.

7.3 CMM 2016-03 – Interim Transshipment Procedures

31. Canada pointed out the need for the TCC to prioritize the development of a transshipment monitoring scheme in its work plan.

7.4 CMM 2016-04 – Vessels with No Nationality

32. No issues were discussed.

7.5 CMM 2017-05 – Bottom Fisheries and VME Protection NW Pacific Ocean

a. Status of the proposal of crab fishery – Russia and Ukraine

33. Russia explained that a Russian fishing company expressed its interest in engaging in crab fishing in the NPFC Convention Area. The company has not yet submitted an official application and will likely do so in the near future.

34. The Secretariat explained that in response to a request from Ukraine to conduct crab fishing in the NPFC Convention Area, the SC recommended that Ukraine present its proposal and plan to the Commission. However, there has been no follow-up action from Ukraine.

7.6 CMM 2017-06 – Bottom Fisheries and VME Protection NE Pacific Ocean

35. The TCC noted interest among Members to discuss the management of North Pacific armorhead stocks at the Commission meeting.

7.7 CMM 2017-07 – Chub Mackerel

36. Japan indicated its intention to propose changes to CMM 2017-07 at the 4th Commission meeting to require Members to report the number of vessels authorized to fish chub mackerel.

37. China expressed concern that Japan has not reported its number of fishing vessels fishing chub mackerel in the NPFC Convention Area and in its national waters, as requested by the Commission. Japan explained that so far no Japanese fishing vessels are fishing for chub mackerel in the Convention Area and that all Japanese fishing vessels for chub mackerel are operating within Japanese waters. Furthermore, as this fishing is conducted by numerous small-scale vessels and set nets, it is practically impossible to report an exact number.

7.8 CMM 2017-08 – Pacific saury

38. Japan indicated its intention to propose changes to CMM 2017-08 at the 4th Commission meeting to require Members to report the number of vessels authorized to fish Pacific saury.

39. China expressed concern over the various and significant changes Japan has made to its catch and effort data in the Convention Area. China indicated that such changes might have negative impacts on the stock assessment and the CMM on Pacific saury. Japan explained that it is providing catch and effort data to the Commission in a timely manner. The revisions made to catch and effort data are part of due process for ensuring greater accuracy and this process is applied to all fisheries species. For catch data, the gap before and after revision is less than 3% and is unlikely to affect the stock assessment results. For the demarcation of catch and effort

data between national waters and the Convention Area, there is a large gap as it takes time to assess and distinguish between fishing in Japanese waters and fishing in the Convention Area. Japan plans to introduce a new data collection system this year using its national TAC system and will explain this new system at the 4th SC meeting.

7.9 CMM 2017-09 – High Seas Boarding and Inspection

40. No issues were discussed.

Agenda Item 8. New MCS-related CMMs and Issues

41. No issues were discussed.

Agenda Item 9. Compliance Work Plan and Priorities

9.1 Forward-looking work plan priorities, projects and budget planning

42. Elements of the existing work plan were noted that include, if endorsed by the Commission, continuation of development of the VMS scheme, the CMS and implementation of the HSBI, and necessary budgetary considerations to be taken into account. This would include continuation of the three SWGs and also development of an SWG for operational enforcement.

9.2 Summary of SWG Recommendations for the TCC Work Plan

43. The SWG recommendations are as listed in paragraph 48, subparagraphs c.-x., below.

Agenda Item 10. Data management and security

10.1 Data management and reporting

(a) Annual Reporting Format (Science vs. Compliance data: e-reports)

44. The Secretariat presented the draft framework for an electronic annual reporting system (NPFC-2018-TCC03-WP05).

Recommendation: The TCC recommended that the Commission task the TCC to establish an electronic annual reporting system through the SWG AC.

10.2 Information security regulations

45. Canada reported on the progress in developing the information security regulations.

Recommendation: The TCC recommended that the Commission task the TCC to continue to develop the information security regulations as a priority area.

46. The Secretariat presented a review of the current electronic systems in place for NPFC and those under development (NPFC-2018-TCC03-IP03), and sought advice from the Members for merging these initiatives into a coordinated and effective database.

Recommendation: The TCC recommended that the Commission task the SWG AC to work with the Secretariat to develop a CMS plan that could necessitate support of a consultant.

Agenda Item 11. Other Matters

47. No other matters were discussed.

Agenda Item 12. Recommendations to the Commission.

48. The TCC recommended the following to the Commission:

(Agenda Item 5)

(a) The TCC recommended to the Commission the need for the development of better indicators of fishing effort.

(b) The TCC recommended that the Commission encourage all Members use the online vessel registry system as soon as possible.

(c) The TCC recommended that the Commission adopt the FAO Standard Specifications for the Marking and Identification of Fishing Vessels including the unique identifier of IMO number (Proposed CMM 2018-01).

(d) The TCC recommended to the Commission that there is a need to hold further discussions on Member and non-Member carrier vessels, the chartering of fishing vessels and other details of CMM 2016-01 as an element of the TCC work plan.

(e) The TCC recommended that the Commission endorse the continuation of the work of SWG VMS to develop and plan the implementation of a regional VMS as per the existing work plan to be presented to the 4th TCC meeting.

(f) The TCC recommended that the Commission task the SWG VMS to propose a regional VMS system to the 4th TCC meeting that will include data-sharing and data-security protocols, technical specifications and resource requirements to implement, operate and maintain the system. The TCC recommended that the Commission task the Secretariat to hire a consultant based on selection criteria determined by the SWG VMS to develop a detailed regional VMS design and implementation plan proposal under the guidance of the SWG VMS.

(g) The TCC recommended that the Commission request that Members make participants available with the necessary technical expertise on VMS and knowledge of each fishery to participate in the work of the SWG VMS.

(h) The TCC recommended that the Commission endorse the development of data-sharing and data-security protocols by TCC, SC and FAC to ensure the secure handling and confidentiality of the data.

(i) The TCC recommended to the Commission that there is a need to take into account overlapping jurisdictions with other RFMOs and ensure compatibility with Members' existing VMS systems.

(j) The TCC recommended that the Commission endorse the continuation of the work of the SWG AC on the CMM Chart of Accounts to incorporate non-compliance/sanctions into the MCS scheme and follow-up reporting by Members on non-compliance issues.

(k) The TCC recommended that the Commission task the SWG AC with updating the NPFC Conservation and Sustainable Use Handbook to include information on sanctions, aiming to finalize and publish it between the fourth and fifth Commission meetings.

(l) The TCC recommended that the Commission adopt the proposed HSBI Implementation Plan (Annex).

(m) The TCC recommended that the Commission adopt the NPFC Inspection Flag design as presented in the HSBI Implementation Plan (including a boarding pennant).

(n) The TCC recommended that the Commission task the Secretariat with determining the shape and measurements of the flags for inspection vessels.

(o) The TCC recommended that the Commission task the Secretariat to develop and maintain an Inspection Vessel and Authority Registry and publish it online. Furthermore, the authorized inspection vessels and related authorities (including inspectors and inspector trainees where applicable) can only commence NPFC HSBI duties 60 days after the Secretariat posts its details on the NPFC public webpage (to inform Members and fishing Masters of the authorization of the inspection vessel).

(p) The TCC recommended that the Commission task the Secretariat to provide inspection vessels with the NPFC Inspection Flag (and pennants where appropriate), publish the related authorized vessel information and the sample inspection personnel ID cards on the NPFC website, and provide a copy of the relevant CMMs active in the Convention Area

to the authorized Compliance Authority for each of the authorized inspection vessels within 30 days of the approval of the Inspection Vessel Registration Form.

(q) The TCC recommended that the Commission task the SWG AC to prioritize the completion of a first draft of an NPFC Handbook to support, *inter alia*, boarding and inspections and include information on active CMMs and other relevant compliance and enforcement information.

(r) The TCC recommended that the Commission adopt the letterhead entitled "Notification to the NPFC of Intention to Carry out Boarding and Inspection Activities" and related "NPFC Inspection Vessel Registration Form" for registering inspection vessels and authorities and supporting online registry information public posting requirements.

(s) The TCC recommended that the Commission adopt the standardized NPFC Boarding and Inspection Form and related Standardized Multi-Language Questionnaire in English and for translation by Members.

(t) The TCC recommended that the Secretariat develop and maintain a list of vessels identified pursuant to paragraph 43 of CMM 2017-09 in support of monitoring fishing vessel activities of non-Members in the CA.

(u) The TCC recommended that the TCC establish a Small Working Group on Operational Enforcement pursuant to paragraph 48 of CMM 2017-09.

(v) The TCC recommended that the Commission task the SWG to explore the utility of a Standard Violation Case Package to support standardized data collection and reporting protocols from high seas boardings and inspections.

(w) The TCC recommended that the Commission task the TCC to clarify which elements of the revised Annual Report should be subject to certain data handling provisions given potential sensitivities of the data.

(x) The TCC recommended that the NPFC Annual Report template be updated by the Secretariat to reflect the information security requirements of the revised Annual Reports and related data.

(Agenda Item 6)

(y) The TCC noted that other RFMOs' observer programs are primarily set up for science and recommended that the Commission request the SC to further discuss observer programs

and that different observer coverages be considered for each fishery based on further discussion at SC.

(z) The TCC recommended to the Commission that there is a need and desire among Members to continue to consider the compliance components of an observer program.

(aa) The TCC recommended that TCC contribute to the SC proposal on the release of documents approach and that the Commission request FAC to further discuss and endorse the proposal for Commission approval.

(bb) The TCC recommended to FAC that access to documents by CNCPs be addressed the same as for Members.

(cc) The TCC recommended that the Commission hold further discussion with respect to the release of documents to observers.

(Agenda Item 7)

(dd) The TCC recommended that the Commission adopt the revised CMM 2016-01 as CMM 2018-01.

(ee) The TCC recommended that the Commission task the TCC to hold further discussions on other data elements required for compliance and vessel identification and the timeline for the submission of such data taking into account the NPFC Convention requirements.

(ff) The TCC recommended that the Commission adopt the Provisional NPFC IUU vessel list.

(gg) The TCC recommended that the Commission task the TCC to update the format of the NPFC Provisional IUU vessel list to include the relevant CMMs.

(Agenda Item 10)

(hh) The TCC recommended that the Commission task the TCC to establish an electronic annual reporting system through the SWG AC.

(ii) The TCC recommended that the Commission task the TCC to continue to develop the information security regulations as a priority area.

(jj) The TCC recommended that the Commission task the SWG AC to work with the Secretariat to develop a CMS plan that could necessitate support of a consultant.

(Agenda Item 13)

(kk) The TCC requested the guidance of the Commission in determining the date and location of the next TCC meeting and recommended that it be held for three days, in conjunction with FAC and Commission meetings.

Agenda Item 13. Next Meeting

49. The TCC noted the importance of ensuring adequate time for the TCC to discuss compliance matters. The TCC considered the possibility of holding face-to-face TCC SWG meetings, if necessary, in the future.

Recommendation: The TCC requested the guidance of the Commission in determining the date and location of the next TCC meeting and recommended that it be held for three days, in conjunction with FAC and Commission meetings.

Agenda Item 14. Adoption of the Report

50. The report was adopted by consensus.

Agenda Item 15. Close of the Meeting

51. The TCC meeting closed at 13:00 on 30 June 2018.

Annex

High Seas Boarding & Inspection - 2018/2019 Implementation Plan

6/6/2018

High Seas Boarding & Inspection – 2018/2019 Implementation Plan

North Pacific Fisheries Commission (NPFC)

High Seas Boarding & Inspection
North Pacific Fisheries Commission

www.npfc.int

Table of Contents

1.0 Objective

The objective of this document is to outline a recommended plan for the implementation of the NPFC's High Seas Boarding and Inspection Procedures as approved through CMM 2017-09 (Annex A).

2.0 General Rights and Obligations

Paragraphs 5, 6, and 7 of CMM 2017-09 state the "General Rights and Obligations" of Contracting Parties and Fishing Entities pertaining to the implementation of high seas boarding and inspection procedures within the NPFC Convention Area. These paragraphs from CMM 2017-09 are referenced as follows:

> *"5. Each Contracting Party may, subject to the provisions of these procedures, carry out boarding and inspection on the high seas of fishing vessels engaged in or reported to have engaged in a fishery regulated pursuant to the Convention.*
>
> *6. These procedures shall also apply in their entirety as between a Contracting Party and a Fishing Entity, subject to a notification to that effect to the Commission from the parties concerned.*
>
> *7. Each Member of the Commission shall ensure that vessels flying its flag accept boarding and inspection by authorized inspectors in accordance with these procedures. Such authorized inspectors shall comply with these procedures in the conduct of any such activities."*

3.0 Boarding Inspection Identification Requirements

This section deals with identifying the required components of CMM 2017-09 that will form part of the implementation plan.

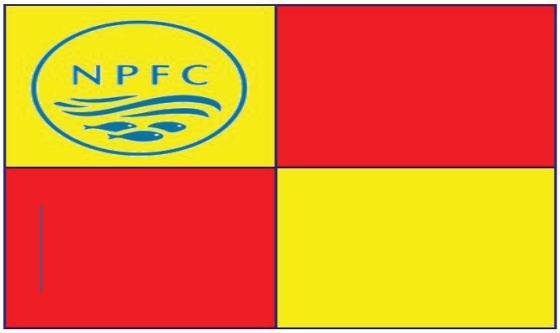
3.1 NPFC Flag

Paragraph 19 of CMM 2017-09 states that,

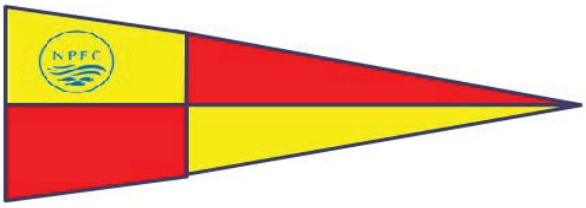
> *"The Commission shall develop an NPFC inspection flag, which shall be flown by authorized inspection vessels, in clearly visible fashion."*

NPFC Inspection Flag and Boarding Pennant

The following Inspection Flag is intended to be used by authorized inspection vessels. The dimensions are 94 cm by 213 cm (height by length).



The following Boarding Pennant is intended to be used by authorized inspection vessels. The dimensions are 45cm by 66cm (18in by 26in) (height by length)



The Commission may also wish to consider asking the Secretariat to assess various flag makers and then propose a single supplier for all Members to ensure that all flags of the Commission meet common specification and quality standards.

It is recommended that the Commission adopt the NPFC Inspection Flag design as presented in this section (including a boarding pennant). It is further recommended that the Secretariat work with the SWG Assessing Compliance to confirm the dimensions of the inspection flag and boarding pennant and to proceed with the production.

3.2 NPFC High Seas Boarding and Inspection Register for Authorized Vessels and Personnel

As per paragraph 13 of CMM 2017-09:

> *"The Commission shall maintain a register of all authorized inspection vessels and authorities or inspectors. Only vessels and authorities or inspectors listed on the Commission's register are authorized under these procedures to board and inspect fishing vessels of Commission Members and Cooperating Non-Contracting Parties on the high seas within the Convention Area."*

It is recommended that:

(i) the Secretariat develop and maintain an Inspection Vessel and Authority Registry and publish it online. It should be further noted that the authorized inspection vessels and related authorities (including inspectors and inspector trainees where applicable) can only commence NPFC HSBI duties 60 days after the Secretariat posts its details on the NPFC public webpage (to inform Members and fishing Masters of the authorization of the inspection vessel);

(ii) within 30 days of the approval of the Inspection Vessel Registration Form (including inspector registration) the NPFC Secretariat is to provide the vessel a NPFC boarding flag (and pennants where appropriate), publish the related authorized vessel information and the sample inspection personnel ID cards on the NPFC website, and issue a copy of relevant CMMs active in the Convention Area to the authorized Compliance Authority for each of the authorized inspection vessels; and,

(iii) the TCC direct the SWG AC to prioritize the completion of a first draft of an NPFC Handbook – a complementary tool to support, *inter alia,* boarding and inspections and will include information on active CMMs and other relevant compliance and enforcement information.

3.3 Registry of Inspection Vessels & Authorities

According to paragraph 14 of CMM 2017-09:

> *"Each Contracting Party that intends to carry out boarding and inspection activities pursuant to these procedures shall so notify the Commission, through the Executive Secretary, and shall provide the following:*
>
> *(a) with respect to each inspection vessel it assigns to boarding and inspection activities under these procedures:*
>
> *(i) details of the vessel (name, description, photograph, registration number, port of registry (and, if different from the port of registry, port marked on the vessel hull), international radio call sign and general communication channels);*
>
> *(ii) an example of the credentials issued to the inspectors by its authorities;*
>
> *(iii) notification that the inspection vessel is clearly marked and identifiable as being on government service;*
>
> *(iv) notification that the crew has received and completed training in carrying out boarding and inspection activities at sea in accordance with any standards and procedures as may be adopted by the Commission."*

It is recommended that the letterhead entitled "Notification to the NPFC to Carry out Boarding and Inspection Activities (Annex B) and related "NPFC Inspection Vessel Registration Form" (see Annex B-1) be adopted for use in implementing this paragraph and to support online registry information public posting requirements.

3.4 Identification of NPFC Inspectors

Further to the requirements for Inspection Vessel registration, paragraph 14 (b) of CMM 2017-09 states:

> *"Each Contracting Party that intends to carry out boarding and inspection activities pursuant to these procedures shall so notify the Commission, through the Executive Secretary, and shall provide the following:*
>
> *(b) with respect to inspectors it assigns pursuant to these procedures:*
>
> *(i) the names of the authorities responsible for boarding and inspection;*
>
> *(ii) notification that such authorities' inspectors are fully familiar with the fishing activities to be inspected and the provisions of the Convention and conservation and management measures in force; and*
>
> *(iii) notification that such authorities' inspectors have received and completed training in carrying out boarding and inspection activities at sea in accordance with any standards and procedures as may be adopted by the Commission."*

In addition, paragraph 20 of CMM 2017-09 states:

> *"Authorized inspectors shall carry an approved identity card identifying the inspector as authorized to carry out boarding and inspection procedures under the auspices of the Commission and in accordance with these procedures."*

Since Members usually have their own identity cards for inspectors, they are required to transmit to the NPFC Secretariat for compiling and posting on the NPFC website samples of their respective inspection personnel identity cards.

Members shall transmit to the NPFC Secretariat for compiling and posting on the NPFC website samples of their respective inspection personnel identity cards.

4.0 Common Boarding Procedures, Standardized Inspection Reports and Multilingual Questionnaire

High Seas boarding and inspection procedures will be implemented in accordance with CMM 2017-09. This implementation plan includes a standardized boarding form (Annex C) pursuant to paragraphs 31 and 32 of CMM 2017-09.

Furthermore, paragraph 22 of CMM 2017-09 states:

> *"In carrying out boarding and inspection pursuant to these procedures, the authorized inspection vessel and authorized inspectors shall make their best efforts to communicate with the master of the fishing vessels in a language that the master can understand. In order to facilitate communications*

between the inspectors and the master of the vessel, the Commission shall develop a standardized multilingual questionnaire, which shall be circulated to all Contracting Parties with authorized inspection vessels."

*Member*s have the responsibility to translate the questionnaire into their language(s) used by their vessels so that it is accessible by those conducting inspections.

It is recommended that:

(i) the TCC adopt the standardized NPFC Boarding and Inspection Form (Annex C) and related Standardized Multilingual Questionnaire (Annex D) in English and for translation by Members;
(ii) the Secretariat develop and maintain a list of vessels identified pursuant to paragraph 43 of CMM 2017-09 in support of monitoring fishing vessel activities of non-Members in the CA;
(iii) the TCC establish a Small Working Group on Operational Enforcement pursuant to paragraph 48 of CMM 2017-09.

5.0 Standard Case Package Format

This section is for discussion and to introduce the utility of a standardized Violation Case Package:

- Case package submitted to Authority promptly (or as provided for under paragraph 31 of CMM 2017-09):
  - Standardized NPFC Coversheet with picture of the vessel inspected
  - Completed NPFC Boarding Report
  - Boarding Inspector statement (develop template)
    - Description of potential violations with reference to the appropriate CMM and paragraph
  - Boarding team statements (only if they apply to or observed the potential violation)
  - GPS verification form for the position of the inspection from the inspection vessel (and if possible validated from the vessel inspected)
  - Print of the NPFC Enforcement Vessel from NPFC website
  - Print (if available) of the FFV from the NPFC list of registered vessels
  - Photos depicting the potential violation, with auto date/ time stamp where possible and accompanied by the Inspecting Officer's description of each photo and signature.
  - Photos of only the master's passport/credentials including data/time stamp accompanied by statement from the Inspector as to how, when and where these were taken.
  - Photos of any provided documentation / evidence to support violation with date/time stamp accompanied by statement from the Inspector as to how, when and where these were taken.
  - Photo log signed by the inspector (or photographer).

- Statement by the Inspector or case officer on the 'continuity of the evidence' from the time of the inspection until the time of passing the package to higher authorities, either flag Member of the inspection vessel, or flag Member of the vessel inspected.

It is recommended that the TCC direct the SWG to explore the utility of a Standard Violation Case Package to support standardized data collection and reporting protocols from high seas boardings and inspections.

6.0 Annual Reports

As per CMM 2017-09 paragraphs 41 and 42:

41. "Contracting Parties that authorize inspection vessels to operate under these procedures shall report annually to the Commission on the boarding and inspections carried out by its authorized inspection vessels, as well as upon possible violations observed, and,

44. *Contracting Parties shall include in their annual statement of compliance within their Annual Report to the Commission under Article 16 of the Convention action that they have taken in response to boarding and inspections of their fishing vessels that resulted in observation of alleged violations, including any proceedings instituted and sanctions applied."*

It is recommended that:

(i) the TCC clarify which elements of the revised Annual Report should be subject to certain data handling provisions given potential sensitivities of the data; and,

(ii) the NPFC Annual Report template be updated by the Secretariat to reflect the information security requirements of these reports and related data.

7.0 Implementation Task Table 2018/2019

TASK	Description	Start/End	Lead	Status	Notes
1	Finalize design and acquisition of flags	July 2018/August 2018	Secretariat-SWG AC	Pending	
2	Finalize inspection vessel registry form and distribute to members	July 2018/September 2018	Secretariat-SWG AC	Pending	
3	Submission and registry of inspection vessels, inspection credential examples and names of authorities responsible for boarding and inspection	Dependent on #2	Members	Pending	
4	Update website with the information in Task 3 (public)	Dependent on #3	Secretariat	Pending	
5	Issuance of flags to approved inspection authorities	Dependent on #1	Secretariat	Pending	
6	Issue booklet of current CMMs for boarding teams and one each for the Master of each authorized inspection vessel	July 2018/TBD	Secretariat-SWG AC	Pending	
7	Update web site with HSBI documentation according to NPFC confidentiality rules	Ongoing	Secretariat	Pending	
8	Consider development of Case Package Standards	Ongoing	Secretariat-SWG-Members	Pending	
9	Establish SWG on Operational Enforcement	July-August 2018	Secretariat, SWG Members (e.g. operational personnel)	Pending	
10	SWG on Operational Enforcement review the status of implementation	2018-19	Secretariat, SWG Members (e.g. operational personnel)	Pending	

8.0 Annexes

Annex A – CMM 2017-09 Conservation and Management Measure for High Seas Boarding and Inspection Procedures for the North Pacific Fisheries Commission (NPFC)

CMM 2017-09
(Entered Into Force 28 November 2017)

CONSERVATION AND MANAGEMENT MEASURE FOR HIGH SEAS BOARDING AND INSPECTION PROCEDURES FOR THE NORTH PACIFIC FISHERIES COMMISSION (NPFC)

1. The following procedures are established by the North Pacific Fisheries Commission, in accordance with Article 7, paragraph 2-c of its Convention, to govern high seas boarding and inspection of fishing vessels in the Convention Area.

Definitions

2. For the purposes of interpreting and implementing these procedures, the following definitions shall apply:

   (a) "Convention" means the Convention on the Conservation and Management of High Seas Fisheries resources in the North Pacific Ocean;

   (b) "Commission" means the North Pacific Fisheries Commission (NPFC) established under Article 5 of the Convention;

   (c) "Authorities of the Inspection Vessel" means the authorities of the Contracting Party under whose jurisdiction the inspection vessel is operating;

   (d) "Authorities of the Fishing Vessel" means the authorities of the Member of the Commission under whose jurisdiction the fishing vessel is operating;

   (e) "Authorized inspection vessel" means any vessel included in the Commission's register of vessels as authorized to engage in boarding and inspection activities pursuant to these procedures;

   (f) "Authorized inspector" means inspectors employed by the authorities responsible for boarding and inspection included in the Commission register and authorized to conduct boarding and inspection activities pursuant to these procedures;

   (g) "Fishing activity" means the activities established under Article 1 (i) of the Convention;

   (h) "Fishing vessels" means any vessel described under Article 1 (j) of the Convention.

PURPOSE

3. Boarding and inspection and related activities conducted pursuant to these procedures shall be for the purpose of ensuring compliance with the provisions of the Convention and conservation and management measures adopted by the Commission and in force.

AREA OF APPLICATION

4. These procedures shall apply throughout the Convention Area, which consists of the high seas areas of the North Pacific Ocean as specified in Article 4 of the Convention.

GENERAL RIGHTS AND OBLIGATIONS

5. Each Contracting Party may, subject to the provisions of these procedures, carry out boarding and inspection on the high seas of fishing vessels engaged in or reported to have engaged in a fishery regulated pursuant to the Convention.

6. These procedures shall also apply in their entirety as between a Contracting Party and a Fishing Entity, subject to a notification to that effect to the Commission from the parties concerned.

7. Each Member of the Commission shall ensure that vessels flying its flag accept boarding and inspection by authorized inspectors in accordance with these procedures. Such authorized inspectors shall comply with these procedures in the conduct of any such activities.

GENERAL PRINCIPLES

8. These procedures are intended to implement and give effect to, and are to be read consistently with, Article 7.2.c and Article 17.6 of the Convention.

9. These procedures shall be implemented in a transparent and non-discriminatory manner, taking into account, inter alia:

   (a) such factors as the presence of observers on board a vessel and the frequency and results of past inspections; and

   (b) the full range of measures to monitor compliance with the provisions of the Convention and agreed conservation and management measures, including inspection activities carried out by the authorities of Members of the Commission in respect of their own flag vessels.

10. While not limiting efforts to ensure compliance by all vessels, priority for boarding and inspection efforts pursuant to these procedures may be given to:

   (a) fishing vessels that are not on the NPFC Record of Fishing Vessels and are flagged to Members of the Commission;

   (b) fishing vessels reasonably believed to engage or to have been engaged in any activity in contravention of the Convention or any conservation and management measure adopted thereunder;

   (c) fishing vessels that are entitled to fly the flag of a Member of the Commission that does not dispatch patrol vessels to the area of application to monitor its own fishing vessels;

   (d) fishing vessels without observers on board if so required by the Convention, Article 7.2 (b);

(e) fishing vessels with a known history of violating conservation and management measures adopted by international agreement or any domestic laws and regulations.

11. The Commission shall keep the implementation of these procedures under review.

12. The interpretation of these procedures shall rest with the Commission.

PARTICIPATION

13. The Commission shall maintain a register of all authorized inspection vessels and authorities or inspectors. Only vessels and authorities or inspectors listed on the Commission's register are authorized under these procedures to board and inspect fishing vessels of Commission Members and Cooperating Non-Contracting Parties on the high seas within the Convention Area.

14. Each Contracting Party that intends to carry out boarding and inspection activities pursuant to these procedures shall so notify the Commission, through the Executive Secretary, and shall provide the following:

(a) with respect to each inspection vessel it assigns to boarding and inspection activities under these procedures:

(i) details of the vessel (name, description, photograph, registration number, port of registry (and, if different from the port of registry, port marked on the vessel hull), international radio call sign and communication capability);

(ii) An example of the credentials issued to the inspectors by its authorities;

(iii) notification that the inspection vessel is clearly marked and identifiable as being on government service;

(iv) notification that the crew has received and completed training in carrying out boarding and inspection activities at sea in accordance with any standards and procedures as may be adopted by the Commission.

(b) with respect to inspectors it assigns pursuant to these procedures:

(i) the names of the authorities responsible for boarding and inspection;

(ii) notification that such authorities' inspectors are fully familiar with the fishing activities to be inspected and the provisions of the Convention and conservation and management measures in force; and

(iii) notification that such authorities' inspectors have received and completed training in carrying out boarding and inspection activities at sea in accordance with any standards and procedures as may be adopted by the Commission.

15. Where military vessels are used as a platform for the conduct of boarding and inspection, the authorities of the inspection vessel shall ensure that the boarding and inspection is carried out by inspectors fully trained in fisheries enforcement procedures and duly authorized for this purpose under national laws, and that boardings from such military vessels and inspectors conform to the procedures contained within these Boarding and Inspection Procedures.

16. Authorized inspection vessels and inspectors notified by Contracting Parties pursuant to paragraph 14 shall be included on the Commission register once the Executive Secretary confirms that they meet the requirements of that paragraph.

17. To enhance the effectiveness of the Commission's boarding and inspection procedures, and to maximize the use of trained inspectors, Contracting Parties may identify opportunities to place authorized inspectors on inspection vessels of another Contracting Party. Where appropriate, Contracting Parties should seek to conclude bilateral arrangements to this end or otherwise facilitate communication and coordination between them for the purpose of implementing these procedures.

18. The Executive Secretary shall ensure that the register of authorized inspection vessels and authorities or inspectors is at all times available to all Members of the Commission and shall immediately circulate any changes therein. Updated lists shall be posted on the Commission website. Each Member of the Commission shall take necessary measures to ensure that these lists are circulated in a timely manner to each of its fishing vessels operating in the Convention Area.

PROCEDURES

19. The Commission shall develop an NPFC inspection flag, which shall be flown by authorized inspection vessels, in clearly visible fashion.

20. Authorized inspectors shall carry an approved identity card identifying the inspector as authorized to carry out boarding and inspection procedures under the auspices of the Commission and in accordance with these procedures.

21. An authorized inspection vessel that intends to board and inspect a fishing vessel on the high seas that is engaged in or reported to have engaged in a fishery regulated pursuant to the Convention shall, prior to initiating the boarding and inspection:

    (a) make best efforts to establish contact with the fishing vessel by radio, by the appropriate International Code of Signals or by other accepted means of alerting the vessel;

    (b) provide the information to identify itself as an authorized inspection vessel - name, registration number, international radio call sign and contact frequency;

    (c) communicate to the master of the vessel its intention to board and inspect the vessel under the authority of the Commission and pursuant to these procedures; and

    (d) initiate notice through the authorities of the inspection vessel of the boarding and inspection to the authorities of the fishing vessel.

22. In carrying out boarding and inspection pursuant to these procedures, the authorized inspection vessel and authorized inspectors shall make their best efforts to communicate with the master of the fishing vessels in a language that the master can understand. In order to facilitate communications between the inspectors and the master of the vessel, the Commission shall develop a standardized multi-language questionnaire, which shall be circulated to all Contracting Parties with authorized inspection vessels.

23. Authorized inspectors shall have the authority to inspect the vessel, its license, gear, equipment, records, facilities, fish and fish products and any relevant documents necessary to verify

compliance with the conservation and management measures in force pursuant to the Convention.

24. Boarding and inspection pursuant to these procedures shall:

(a) be carried out in accordance with internationally accepted principles of good seamanship so as to avoid risks to the safety of fishing vessels and crews;

(b) be conducted as much as possible in a manner so as not to interfere unduly with the lawful operation of the fishing vessel;

(c) take reasonable care to avoid action that would adversely affect the quality of the catch; and

(d) not be conducted in such manner as to constitute harassment of a fishing vessel, its officers or crew.

25. In the conduct of a boarding and inspection, the authorized inspectors shall:

(a) present their identity card to the master of the vessel and a copy of the text of the relevant measures in force pursuant to the Convention in the relevant area of the high seas;

(b) not interfere with the master's ability to communicate with the authorities of the fishing vessel;

(c) complete the inspection of the vessel within 4 (four) hours unless evidence of a serious violation is found;

(d) collect and clearly document any evidence they believe indicates a violation of measures in force pursuant to the Convention;

(e) provide to the master prior to leaving the vessel a copy of an interim report on the boarding and inspection including any objection or statement which the master wishes to include in the report;

(f) promptly leave the vessel following completion of the inspection if they find no evidence of a serious violation; and

(g) provide a full report on the boarding and inspection to the authorities of the fishing vessel, pursuant to paragraph 31, which shall also include any master's statement.

26. During the conduct of a boarding and inspection, the master of the fishing vessel shall:

(a) follow internationally accepted principles of good seamanship so as to avoid risks to the safety of authorized inspection vessels and inspectors;

(b) accept and facilitate prompt and safe boarding by the authorized inspectors;

(c) cooperate with and assist in the inspection of the vessel pursuant to these procedures;

(d) not assault, resist, intimidate, interfere with, or unduly obstruct or delay the inspectors in the performance of their duties;

(e) allow the inspectors to communicate with the crew of the inspection vessel, the authorities of the inspection vessel, any embarked observers, as well as with the authorities of the fishing vessel being inspected;

(f) provide the inspectors onboard with reasonable facilities, including, where appropriate, food and accommodation; and

(g) facilitate safe disembarkation by the inspectors.

27. If the master of a fishing vessel refuses to allow an authorized inspector to carry out a boarding and inspection in accordance with these procedures, such master shall offer an explanation of the reason for such refusal. The authorities of the inspection vessel shall immediately notify the authorities of the fishing vessel, as well as the Commission, of the master's refusal and any explanation.

28. The authorities of the fishing vessel, unless generally accepted international regulations, procedures and practices relating to safety at sea make it necessary to delay the boarding and inspection, shall direct the master to accept the boarding and inspection. If the master does not comply with such direction, the Member shall suspend the vessel's authorization to fish and order the vessel to return immediately to port. The Member shall immediately notify the authorities of the inspection vessel and the Commission of the action it has taken in these circumstances.

USE OF FORCE

29. The use of force shall be prohibited except when and to the degree necessary to ensure the safety of the inspectors during the conduct of their boarding and inspection activities. The degree of force used shall not exceed that reasonably required in the circumstances.

30. Any incident involving the use of force shall be immediately reported to the authorities of the fishing vessel, as well as to the Executive Secretary for distribution to the Commission.

INSPECTION REPORTS

31. Authorized inspectors shall prepare a full report on each boarding and inspection they carry out pursuant to these procedures in accordance with a format specified by the Commission. The authorities of the inspection vessel from which the boarding and inspection was carried out shall transmit a copy of the boarding and inspection report to the authorities of the fishing vessel being inspected, as well as the Commission, within 3 (three) full working days of the completion of the boarding and inspection. Where it is not possible for the authorities of the inspection vessel to provide such report to the authorities of the fishing vessel within this timeframe, the authorities of the inspection vessel shall inform the authorities of the fishing vessel and shall specify the time period within which the report will be provided.

32. Such report shall include the names and authority of the inspectors and clearly identify any observed activity or condition that the authorized inspectors believe to be a violation of the Convention or conservation and management measures in force and indicate the nature of specific factual evidence of such violation.

SERIOUS VIOLATIONS

33. In the case of any boarding and inspection of a fishing vessel during which the authorized inspectors observe an activity or condition that would constitute a serious violation, as defined

in paragraph 38, the authorities of the inspection vessels shall immediately notify the authorities of the fishing vessel, directly as well as through the Commission.

34. Upon receipt of a notification under paragraph 33, the authorities of the fishing vessels shall without delay:

    (a) assume their obligation to investigate and, if the evidence warrants, take enforcement action against the fishing vessel in question and so notify the authorities of the inspection vessel, as well as the Commission; or

    (b) authorize the authorities of the inspection vessel to complete investigation of the possible violation and so notify the Commission.

35. In the case of 34(a) above, the authorities of the inspection vessel shall provide, as soon as practicable, the specific evidence collected by the authorized inspectors to the authorities of the fishing vessel.

36. In the case of 34(b) above, the authorities of the inspection vessel shall provide the specific evidence collected by the authorized inspectors, along with the results of their investigation, to the authorities of the fishing vessel immediately upon completion of the investigation.

37. Upon receipt of a notification pursuant to paragraph 33, the authorities of the fishing vessel shall make best effort to respond without delay and in any case no later than within 3 (three) full working days.

38. For the purposes of these procedures, a serious violation means the following violations of the provisions of the Convention or conservation and management measures adopted by the Commission:

    (a) fishing without a valid license, permit or authorization issued by the Member whose flag the fishing vessel is entitled to fly, in accordance with Article 13 of the Convention;

    (b) significant failure to maintain records of catch and catch-related data in accordance with the Commission's reporting requirements or significant misreporting of such catch and/or catch-related data;

    (c) fishing in a closed area;

    (d) fishing during a closed season;

    (e) intentional taking or retention of species in contravention of any applicable conservation and management measure adopted by the Commission;

    (f) significant violation of catch limits or quotas in force pursuant to the Convention;

    (g) using prohibited fishing gear;

    (h) falsifying or intentionally concealing the markings, identity or registration of a fishing vessel;

    (i) concealing, tampering with or disposing of evidence relating to investigation of a violation;

(j) multiple violations which taken together constitute a serious disregard of measures in force pursuant to the Commission;

(k) refusal to accept a boarding and inspection, other than as provided in paragraphs 27 and 28;

(l) assault, resist, intimidate, sexually harass, interfere with, or unduly obstruct or delay an authorized inspector; and

(m) intentionally tampering with or disabling the vessel monitoring system;

(n) such other violations as may be determined by the Commission, once these are included and circulated in a revised version of these procedures.

ENFORCEMENT

39. Any evidence obtained as a result of a boarding and inspection pursuant to these procedures with respect to violation by a fishing vessel of the Convention or conservation and management measures adopted by the Commission and in force shall be referred to the authorities of the fishing vessel for action in accordance with Article 17 of the Convention.

40. For the purposes of these procedures, the authorities of the fishing vessels shall regard interference by their fishing vessels, captains or crew with an authorized inspector or an authorized inspection vessel in the same manner as any such interference occurring within its exclusive jurisdiction.

ANNUAL REPORTS

41. Contracting Parties that authorize inspection vessels to operate under these procedures shall report annually to the Commission on the boarding and inspections carried out by its authorized inspection vessels, as well as upon possible violations observed.

42. Contracting Parties shall include in their annual statement of compliance within their Annual Report to the Commission under Article 16 of the Convention action that they have taken in response to boarding and inspections of their fishing vessels that resulted in observation of alleged violations, including any proceedings instituted and sanctions applied.

OTHER PROVISIONS

43. Authorized inspection vessels, while carrying out activities to implement these procedures, shall engage in surveillance aimed at identifying fishing vessels of non-Members undertaking fishing activities on the high seas in the Convention area. Any such vessels identified shall be immediately reported to the Executive Secretary for distribution to the Commission.

44. The authorized inspection vessel shall attempt to inform any fishing vessel identified pursuant to paragraph 43 that has been sighted or identified as engaging in fishing activities that are undermining the effectiveness of Convention and that this information will be sent to the Executive Secretary for distribution to the Members of the Commission and the non-Member whose flag the fishing vessel is entitled to fly of the vessel in question.

45. If warranted, the authorized inspectors may request permission from the fishing vessel and/or the non-Member whose flag the vessel is entitled to fly to board a vessel identified pursuant to paragraph 43. If the vessel master or the vessel's non-Member whose flag the vessel is entitled to fly consents to a boarding, the findings of any subsequent inspection shall be transmitted to

the Executive Secretary. The Executive Secretary shall distribute this information to all Commission Members as well as to the non-Member whose flag the vessel is entitled to fly.

46. Contracting Parties shall be liable for damage or loss attributable to their action in implementing these procedures when such action is unlawful or exceeds that reasonably required in the light of available information.

COMMISSION COORDINATION AND OVERSIGHT

47. Authorized inspection vessels in the same operational area should seek to establish regular contact for the purpose of sharing information on areas in which they are patrolling, on sightings and on boarding and inspections they have carried out, as well as other operational information relevant to carrying out their responsibilities under these procedures.

48. The Commission shall keep under continuous review the implementation and operation of these procedures, including review of annual reports relating to these procedures provided by Members. In applying these procedures, Contracting Parties may seek to promote optimum use of the authorized inspection vessels and authorized inspectors by:

    (a) identifying priorities by area and/or by fishery for boarding and inspections pursuant to these procedures;

    (b) ensuring that boarding and inspection on the high seas is fully integrated with the other monitoring, compliance and surveillance tools available pursuant to the Convention;

    (c) ensuring non-discriminatory distribution of boarding and inspections on the high seas among fishing vessels of Members of the Commission without compromising the opportunity of Contracting Parties to investigate possible serious violations; and

    (d) taking into account high seas enforcement resources assigned by Members of the Commission to monitor and ensure compliance by their own fishing vessels, particularly for small boat fisheries whose operations extend onto the high seas in areas adjacent to waters under their jurisdiction.

SETTLEMENT OF DISAGREEMENTS

49. In the event of a disagreement concerning the application or implementation of these procedures, the parties concerned shall consult in an attempt to resolve the disagreement.

50. If the disagreement remains unresolved following the consultations, the Executive Secretary of the Commission shall, at the request of the parties concerned, and with the consent of the Commission, refer the disagreement to the Technical and Compliance Committee (TCC). The TCC shall establish a panel of five representatives, acceptable to the parties to the disagreement, to consider the matter.

51. A report on the disagreement shall be drawn up by the panel and forwarded through the TCC Chair to the Executive Secretary for distribution to the Commission within two months of the TCC meeting at which the case is reviewed.

52. Upon receipt of such report, the Commission may provide appropriate advice with respect to any such disagreement for the consideration of the Members concerned.

53. Application of these provisions for the settlement of disagreements shall be non-binding. These provisions shall not prejudice the rights of any Member to use the dispute settlement procedures provided in the Convention.

Annex B – HSBI Implementation Plan

[Date , 20XX]

Executive Secretary
North Pacific Fisheries Commission
2F Hakuyo-Hall, Tokyo University of Marine Science and Technology
4-5-7 Konan, Minato-ku, Tokyo 108-8477 Japan

Subject: Notification to the NPFC of Intention to Carry out Boarding and Inspection Activities

Dear _____ :

The purpose of this correspondence is to implement the notification procedures as required by paragraphs 14 of CMM 2017-09;

With respect to paragraph 6 of CMM 2017-09, additional written notifications to the Commission from the Contracting Party as well as the Fishing Entity are required.

With respect to paragraph 14. (a) (i) please find the details of the vessel(s) for registration in the corresponding NPFC Inspection Vessel Registration Form under Annex A. Also included as part of this annex are an example of the credentials issued to inspectors (per paragraph 14. (a) (ii)) and the names of the authorities responsible for boarding and inspection (per paragraph 14. (b) (i)).

With respect to 14 (a) (iii) please consider this as notification that the inspection vessel(s) is clearly marked and identifiable as being on government service.

With respect to paragraph 14 (a) (iv) please consider this as notification that the crew has received and completed training in carrying out boarding and inspection activities at sea in accordance with any standards and procedures as may be adopted by the Commission.

With respect to 14 (b) (ii) please consider this as notification that [authority's] inspectors and assigned boarding crews are fully familiar with the fishing activities to be inspected and the provisions of the Convention and conservation and management measures in force.

With respect to 14 (b) (iii) please consider this as notification that [authority's] inspectors and assigned boarding crews have received and completed training in carrying out boarding and inspection activities at sea in accordance with any standards and procedures as may be adopted by the Commission.

Sincerely,

[Compliance Authorized Official on behalf of the Contracting Party or Fishing Entity]

Annex B-1 – NPFC HSBI Paragraphs 13 and 14 Notifications

NPFC Inspection Vessel Registration Form

As per paragraphs 14 of CMM 2017-09, (Compliance Authorized Official on behalf of Contracting Party or Fishing Entity) hereby notifies the Commission that it intends to carry out boarding and inspection activities pursuant to the CMM on High Seas Boarding Procedures (CMM 2017-09), and requests the following vessel(s) be added to the Registry:

Inspection Vessel:

Vessel Name: _____ Port of Registry: _____

Length: _____ Description: _____

Radio Callsign: _____ Communications Calling channels – VHF Channel 16

Assigned NPFC Inspection Vessel number: _____

Photograph

Compliance Authority Contact information (pursuant to CMM 2017-09 common boarding procedures):

Primary Contact

Name: _____

Phone: _____

Email: _____

Secondary Contact

Name: _____

Phone: _____

Email: _____

North Pacific Fisheries Commission

BOARDING REPORT

DATE: MO DY YR
/ /

BOARDING TIME (UTC)
START | FINISH

BOARDING IDENTIFICATION NUMBER

VESSEL

MEMBER REGISTRATION NUMBER

VESSEL NAME

IMO NUMBER

OPTIONAL: (Unique identifiers)

NPFC VESSEL ID # /RECORD LOCATOR

LENGTH (METERS)

TONNAGE (DWT)

HOMEPORT

FLAG

IRCS

CREW

VESSEL TYPE

PURSE SEINE LONGLINE POLE/LINE TROLL RING NET HANDLINE BUNKER CARRIER

SQUID JIGGING DIP NET LIFT NETS TRAWL GILLNET TRAP OTHER:

MASTER

MASTER'S NAME (LAST, FIRST and MIDDLE INITIAL)

JURISDICTION

ADDRESS

PASSPORT NUMBER AND ISSUING AUTHORITY

BIRTHDATE (DD/MMM/YYYY)
/ /

OWNER

OWNER'S NAME

JURISDICTION

ADDRESS

PHONE

COMPANY NAME

OBSERVED IN USE

ACTIVITY
FISHING TRANSITING SUPPORTING

DETAILED GEOGRAPHIC LOCATION

LATITUDE

LONGITUDE

Verification	
Vessel documentation *(CMM 2017-09)*	Checked: Yes / No
Reports/VMS (Where applicable)	
VMS transponder installed	Yes / No
VMS system operative	Yes / No
Recording of Fishing Effort and Catches	
Fishing logbook checked *(CMM 2017-09)*	Checked: Yes / No
Indicate if fishing logbook is:	Paper or Electronic or Both
Are recordings made in accordance with the NPFC CMM 2017-09?	Yes / No
Recording of Transshipments	Yes / No

Description of transshipment reports on board (If applicable)

Compliance with NPFC CMMs	
CMM 2016-01: Vessel Registry	Yes / No
CMM 2017-09: Vessel Markings	Yes / No / N/A
CMM 2016-03: Transshipments	Yes / No / N/A
CMM 2017-05: Bottom Fish – NW VME	Yes / No / N/A
CMM 2017-06: Bottom Fish – NE VME	Yes / No / N/A
CMM 2017-07: Chub Mackerel	Yes / No / N/A
CMM 2017-08: Pacific Saury	Yes / No / N/A

CATCH AMOUNT AND TYPE (SPECIES) ONBOARD

Summary of total claimed onboard catch (CMM 2017-09)

Effort	Fish Species (with 3-Alpha code)	Catch (metric tonnes)	How Processed	Discards
Days:				

Sets:				

Result of Inspection of Fish Onboard (Optional):

Comment in the case of a significant difference between the inspector's estimates of the catches on board and the related summaries of catches from the logbooks, note this difference with the percentage:

Last Port of Call:	Date:		Next Port of Call:	Date (estimated):	
MASTER COMMENT?	YES	NO	OBSERVER ONBOARD?	YES	NO
OBSERVER'S NAME					
OBSERVER'S FLAG STATE					

REQUIREMENTS FOR ALL VESSELS

REMARKS REGARDING BOARDING AND VESSEL COMPLIANCE WITH COMMISSION CONSERVATION AND MANAGEMENT MEASURES IN FORCE.

ENFORCEMENT VESSEL NAME	FLAG
BOARDING OFFICER NAME(S)	BOARDING OFFICER SIGNATURE

NPFC INSPECTION BOARDING REPORT

Revised 03/2018

White-NPFC Pink-Master

Pts. 1-4 Back

PURPOSE OF BOARDING

The purpose of this boarding report is to document the outcome of at-sea boardings of fishing vessels of Members of the North Pacific Fisheries Commission in accordance with the Commission's Conservation Management Measure for High Seas Boarding and Inspection (CMM 2017-09).

SERIOUS VIOLATIONS

As outlined in Article 17, paragraph 5 of the Convention and in paragraph 38 of Conservation and Management Measure (CMM) 2017-09, a serious violation means the following violations of the provisions of the Convention or conservation and management measures adopted by the Commission:

a. Fishing without a license, permit or authorization issued by the flag Member, in accordance with Article 13 of the Convention;
b. Significant failure to maintain sufficient records of catch and catch-related data in accordance with the Commission's reporting requirements or significant misreporting of such catch and/or catch-related data;
c. Fishing in a closed area;
d. Fishing during a closed season;
e. Intentional taking or retention of species in contravention of any applicable conservation and management measure adopted by the Commission;
f. Significant violation of catch limits or quotas in force pursuant to the Convention;
g. Using prohibited fishing gear;
h. Falsifying or intentionally concealing the markings, identity or registration of a fishing vessel;
i. Concealing, tampering with or disposing of evidence relating to investigation of a violation;
j. Multiple violations which taken together constitute a serious disregard of measures in force pursuant to the Commission;
k. Refusal to accept a boarding and inspection; other than as provided in paragraphs 27 and 28
l. Assault, resist, intimidate, sexually harass, interfere with, or unduly obstruct or delay an authorized inspector;
m. Intentionally tampering with or disabling the vessel monitoring system; and,
n. Such other violations as may be determined by the Commission, once these are included and circulated in a revised version of these procedures.

IMPORTANT NOTICE TO OWNER OR OPERATOR

Any evidence obtained as a result of a boarding and inspection pursuant to these procedures with respect to a serious violation by a fishing vessel of the Convention or Conservation and Management Measures adopted by the Commission and in force shall be referred to the authorities of the fishing vessel for action in accordance with Article 17 of the Convention.

Pt. 5 Face

Boarding Remarks (continued)

Master's Comments	
MASTER'S NAME (PRINT)	MASTER'S SIGNATURE

STANDARDIZED MULTILINGUAL QUESTIONNAIRE

BOARDING QUESTIONS

1. **_____(a)_____VESSEL____(b)_____THIS IS THE _____(c)_____ CALLING YOU ON CHANNEL 16 VHF-FM/2182 khz (HF)----OVER.**

   (a) FISHING, CARRIER, or BUNKER
   (b) FISHING, CARRIER, or BUNKER VESSEL'S NAME
   (c) PATROL VESSEL (Coast Guard Cutter, etc.)

2. **REQUEST YOU SWITCH YOUR COMMUNICATIONS TO CHANNEL ____.**

3. **FISHING VESSEL (NAME), THIS IS PATROL VESSEL (NAME) --- WE ARE HERE ON BEHALF OF THE NORTH PACIFIC FISHERIES COMMISSION AND ARE AUTHORIZED TO ENSURE YOU ARE COMPLYING WITH ALL APPLICABLE CONSERVATION AND MANAGEMENT MEASURES. WE INTEND TO BOARD AND INSPECT YOUR VESSEL. PRIOR TO OUR BOARDING OF YOUR VESSEL, WE NEED TO ASK YOU A FEW QUESTIONS.**

4. **IS YOUR VESSEL REGISTERED WITH THE NORTH PACIFIC FISHERIES COMMISSION?**

5. **UNDER WHICH MEMBER'S FLAG ARE YOU REGISTERED?**

6. **WHAT IS YOUR INTERNATIONAL RADIO CALL SIGN?**

7. **WHAT IS YOUR HOMEPORT?**

8. **HOW MUCH _____(a-c)_____ DO YOU HAVE ONBOARD? IF FISH, WHAT TYPE?**

   a. FISH (Fishing Vessel)
   b. FISH and/or SUPPLIES (Carrier Vessel)
   c. FUEL (Bunker Vessel)

9. **WHAT WAS YOUR LAST PORT OF CALL?**

10. **WHAT IS YOUR NEXT PORT OF CALL?**

11. **WHAT IS THE NAME AND JURISDICTION OF YOUR MASTER?**

12. **HOW MANY CREW DO YOU HAVE ONBOARD AND WHAT ARE THEIR JURISDICTIONS?**

13. **DO YOU HAVE ANY WEAPONS ONBOARD? IF SO, WHERE ARE THEY LOCATED?**

14. **DO YOU HAVE A FISHERY OBSERVER ONBOARD? IF SO, WHAT IS THE OBSERVER'S NAME AND JURISDICTION?**

15. **WE WILL BE SENDING OVER A BOARDING PARTY IN (FIVE / FIFTEEN / THIRTY) MINUTES; PLEASE ASSIST THEM IN GETTING ONBOARD AND BY COMPLYING WITH ALL OF THEIR INSTURCTIONS.**

16. **TO ASSIST OUR BOARDING PARTY IN BOARDING YOUR VESSEL, WE REQUEST YOU _____(a-e)_____.**

    a. STOP YOUR VESSEL
    b. SLOW YOUR VESSEL
    c. CONTINUE ON YOUR PRESENT COURSE AND SPEED
    d. TURN TO (PORT / STARBOARD)
    e. LOWER A LADDER ON THE (PORT / STARBOARD) SIDE

17. **TO CONDUCT THIS INSPECTION IN A TIMELY MANNER, PLEASE MAKE AVAILABLE TO OUR BOARDING OFFICER ALL OF YOUR VESSEL'S DOCUMENTS, INCLUDUING YOUR CATCH LOGS AND REPORTS.**

INITIAL BOARDING QUESTIONS

1. **GOOD (MORNING / AFTERNOON / EVENING), ARE YOU THE MASTER OF THE VESSEL? WHAT IS YOUR NAME?**

2. **I AM HERE TO INSPECT YOUR VESSEL FOR COMPLIANCE WITH MEASURES ADOPTED BY THE NORTH PACIFIC FISHERIES COMMISSION**

3. **WHAT SPECIES ARE YOU FISHING FOR?**

4. **IS YOUR VESSEL REGISTERED TO FISH IN THE NORTH PACIFIC FISHERIES COMMISSION CONVENTION AREA?**

5. **DO YOU UNDERSTAND?**

6. **(TO THE MASTER) IF YOU REFUSE TO ALLOW AUTHORIZED BOARDING AND INSPECTION ACTIVITIES, YOUR VESSEL AUTHORITY (*WHERE DIFFERENT FROM INSPECTING VESSEL*) AND THE COMMISSION WILL BE NOTIFIED IMMEDIATELY OF YOUR REFUSAL AND ANY EXPLANATION YOU MAY HAVE, WHICH MAY RESULT IN THE SUSPENSION OF YOUR VESSEL AUTHORIZATION. DO YOU HAVE AN EXPLANATION FOR REFUSING BOARDING AND INSPECTION?**

7. **IS THERE ANYONE HERE WHO SPEAKS _____(a-f)_____**

   (a) ENGLISH
   (b) JAPANESE
   (c) KOREAN
   (d) CHINESE
   (e) FRENCH
   (f) RUSSIAN

8. **I DO NOT HAVE ANYONE ONBOARD WHO CAN SPEAK YOUR LANGUAGE.**

9. **I AM USING MULTI-LINGUAL LANGUAGE CARDS. PLEASE ANSWER MY QUESTIONS SIMPLY AND SLOWLY, USING YES AND NO WHENEVER POSSIBLE**

10. **THESE PEOPLE WILL ASSIST ME IN MY INSPECTION**

11. **PLEASE MUSTER YOUR CREW ON THE (FANTAIL / BOW / OPEN DECK)**

12. **PLEASE INDICATE WHERE YOU KEEP YOUR WEAPONS ONBOARD**

13. **THIS IS A COPY OF THE TEXT OF THE NORTH PACIFIC FISHERIES CONVENTION WHICH PROVIDES ME THE AUTHORITY TO BOARD YOUR VESSEL AND CONDUCT THIS INSPECTION**

14. **PLEASE REVIEW THIS DOCUMENT AND LET ME KNOW IF YOU HAVE ANY QUESTIONS**

15. **THIS IS A COPY OF THE RELEVANT COMMISSION CONSERVATION AND MANAGEMENT MEASURES WHICH APPLY TO YOUR VESSEL**

16. **WHEN WERE YOU INSPECTED LAST? WHO INSPECTED YOU? DO YOU HAVE A COPY OF THEIR BOARDING REPORT?**

17. **I INTEND TO INSPECT YOUR VESSEL TO ENSURE YOUR COMPLIANCE WITH THESE CONSERVATION AND MANAGEMENT MEASURES**

18. **PLEASE SHOW ME**

    (a) YOUR VESSEL'S DOCUMENTS
    (b) YOUR CURRENT PERMITS
    (c) WHERE APPLICABLE, YOUR VESSEL MONITORING SYSTEM AND TRANSMISSION REPORTS
    (d) YOUR CATCH LOGS (INCLUDING TRANSSHIPMENT RECORDS)
    (e) YOUR PLOTTING CHARTS
    (f) YOUR FREEZERS/STORAGE AREAS
    (g) YOUR FISHING GEAR AND EQUIPMENT

19. **YOUR DOCUMENTS AND RECORDS INDICATE YOU ARE IN COMPLETE COMPLIANCE WITH ALL COMMISSION CONSERVATION AND MANAGEMENT MEASURES**

20. **YOUR DOCUMENTS AND RECORDS INDICATE YOU ARE NOT IN COMPLETE COMPLIANCE WITH ALL CONSERVATION AND MANAGEMENT MEASURES**

21. **THIS IS THE SPECIFIC CONSERVATION AND MANAGEMENT MEASURE BY WHICH YOU ARE NOT IN COMPLIANCE**

22. **THIS (IS / IS NOT) CONSIDERED BY THE COMMISSION TO BE A SERIOUS VIOLATION**

23. **I AM SEIZING THIS ITEM FOR EVIDENCE**

24. **I AM PHOTOGRAPHING THIS ITEM TO DOCUMENT THE INSPECTION/VIOLATION**

25. **I WILL USE THIS BOARDING REPORT TO DOCUMENT MY INSPECTION OF YOUR VESSEL**

26. **THIS BOARDING REPORT INDICATES YOU (ARE / ARE NOT) IN COMPLIANCE WITH ALL COMMISSION CONSERVATION AND MANAGEMENT MEASURES**

27. **THIS IS THE COMPLETED BOARDING REPORT, WILL YOU PLEASE SIGN AND THIS IS THE PLACE WHERE YOU CAN WRITE YOUR COMMENTS REGARDING THE INSPECTION.**

28. **THIS IS YOUR COPY OF THE BOARDING REPORT**

29. **A COPY OF THIS BOARDING REPORT WILL BE PROVIDED TO THE FISHERIES ENFORCEMENT AUTHORITIES OF YOUR JURISDICTION (FOR FURTHER ACTION)**

30. **THANK YOU FOR YOUR ASSISTANCE ON THIS BOARDING**

31. **I HAVE COMPLETED THE INSPECTION OF YOUR VESSEL**

32. **WE ARE DEPARTING YOUR VESSEL AT THIS TIME**

2nd Meeting of the Finance and Administration Committee

2 July 2018
Tokyo, Japan
Meeting Report

2nd Meeting of the Finance and Administration Committee

Agenda

Agenda Item 1. Opening of the Meeting

Agenda Item 2. Appointment of Rapporteur

Agenda Item 3. Adoption of Agenda

Agenda Item 4. Financial Statement
- 4.1 Financial Statement from 2017 and 2018 to date
- 4.2 Status of Member Contributions
- 4.3 Working Capital Fund
- 4.4 Special Project Fund

Agenda Item 5. Secretariat's Work Plan 2018; Budget Estimates for 2019-2021

Agenda Item 6. Administration Matters
- 6.1 Establishment of Staff Remuneration, Benefits and Structure
- 6.2 Staff Employment Process
- 6.3 Review of Special Projects from SC and TCC
- 6.4 NPFC Secondment and Intern for 2018

Agenda Item 7. Other matters

Agenda Item 8. Recommendations to the Commission

Agenda Item 9. Next meeting
- 9.1 Date and place of 3rd FAC meeting
- 9.2 Selection of Chair and Vice-Chair

Agenda Item 10. Adoption of the Report

Agenda Item 11. Close of the Meeting

MEETING REPORT

Agenda Item 1. Opening of the Meeting

1. The 2nd Meeting of the Finance and Administration Committee (FAC) took place in Tokyo, Japan on 2 July 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and Vanuatu. The European Union attended as an observer. The meeting was opened by Mr. Kenji Kagawa (Japan) who served as the FAC Chair.

Agenda Item 2. Appointment of Rapporteur

2. Mr. Alexander Meyer was appointed as the Rapporteur.

Agenda Item 3. Adoption of Agenda

3. The Executive Secretary proposed that the FAC discuss recommendations from the Technical and Compliance Committee (TCC) to FAC under Agenda 7. Other Matters. The FAC agreed to the proposal.

4. The agenda was adopted without revision.

Agenda Item 4. Financial Statement

4.1 Financial Statement from 2017 and 2018 to date

4.2 Status of Member Contributions

4.3 Working Capital Fund

4.4 Special Project Fund

5. The Secretariat reported on the income and expenses in 2017, expenses to date in 2018, the status of Member contributions, and the status of the Working Capital Fund and the Special Project Fund (NPFC-2018-FAC02-IP01; NPFC-2018-FAC02-WP05).

6. ***Recommendation:*** The FAC recommended that the Commission approve the recommendation from the auditor that the Working Capital Fund be capped at 6 months.

Agenda Item 5. Secretariat's Work Plan 2018; Budget Estimates for 2019-2021

7. The Secretariat presented its work plan for 2018 (NPFC-2018-FAC02-WP02). The FAC reviewed and revised the work plan. The FAC also noted that the scope of the activities of the NPFC and consequently the Secretariat continues to grow.

   Recommendation: The FAC recommended that the Commission adopt the revised work plan (Annex).

   Recommendation: The FAC recommended that the Commission task the Executive Secretary to provide detailed reports of the implementation of the Secretariat's Work Plan at future FAC meetings.

8. The Secretariat presented the adjusted budget for 2018 and the budget estimates for 2019-2021 (NPFC-2018-FAC02-WP01 [Rev 2]) for the review of the FAC. The FAC endorsed the adjusted budget for 2018 and the proposed budget for 2019, and considered the estimated budgets for 2020 and 2021.

   Recommendation: The FAC recommended that the Commission adopt the adjusted budget for 2018 and the proposed budget for 2019 (Annex).

   Recommendation: The FAC recommended that the Commission request that in the future, the Secretariat should also present the budgeted expenses on a consolidated basis for ease of understanding (e.g. costs associated with SC and TCC, including consultancy, meeting costs, etc.).

Agenda Item 6. Administration Matters

6.1 Establishment of Staff Remuneration, Benefits and Structure

9. Mr. Edward Kremzer summarized the outcomes of the consultancy on NPFC staffing, remuneration, and performance review (NPFC-2018-FAC02-WP03).

10. The Secretariat presented a supplementary report addressing the points raised in the salary consultancy report (NPFC-2018-FAC02-WP03 Supplementary).

11. The FAC reviewed the consultancy report and the supplementary report.

    Recommendation: The FAC recommended that the Commission task the Secretariat to present a paper to the 3rd FAC meeting with a synthesis of the implications of the recommendations from the consultancy, with cost implications for each recommendation and potential cost-savings in other parts of the budget to offset these costs.

Recommendation: The FAC recommended that the Commission task the Secretariat to draft a paper outlining the general understanding of the strategic aim of the NPFC, based on which the NPFC will establish a study group led by Heads of Delegations to establish the Strategic Plan of the NPFC.

Recommendation: The FAC recommended that the Commission task the Secretariat to develop a plan for implementing a 360-degree performance review involving mutual performance reviews among Secretariat staff as soon as is practical, no later than the 3rd FAC meeting.

Recommendation: Regarding the financial work of the Secretariat, the FAC recommended that the Commission not adopt the consultant's recommendation of creating a new position of Administrative and Finance Officer that would combine the positions of the Executive Assistant and Finance Coordinator positions, nor hire a Finance Coordinator as was originally decided by the Commission at its 3rd meeting. Instead, any support for financial work should be procured from an external service provider contractually, with the costs being covered under General Service Category 3 of the NPFC budget. Any leftover funds should be provided to the Working Capital Fund or the Special Projects Fund.

Recommendation: The FAC recommended to the Commission that there should not be automatic progression from one staff grading to the next.

6.2 Staff Employment Process

12. The Secretariat presented the draft employment process to hire NPFC staff, including part-time workers, for Members' consideration (NPFC-2018-FAC02-WP04). The FAC reviewed and revised the proposal (Annex).

    Recommendation: The FAC recommended that the Commission adopt the revised draft employment process.

6.3 Review of Special Projects from SC and TCC

13. The Secretariat explained that no special projects have been proposed thus far.

6.4 NPFC Secondment and Intern for 2018

14. The Secretariat explained that there have been no applicants for the 2018 NPFC Secondment and Internship programs.

Agenda Item 7. Other Matters

15. The FAC considered the proposed work of the TCC and the cost implications.

    Recommendation: The FAC recommended that the Commission task the Secretariat to work in coordination with the Small Working Groups of the TCC to support the High Seas Boarding Inspection Implementation Plan and other work of the TCC.

Agenda Item 8. Recommendations to the Commission

16. The recommendations from the FAC to the Commission are as shown in Annex.

Agenda Item 9. Next Meeting

9.1 Date and place of 3rd FAC meeting

17. ***Recommendation:*** The FAC requested the guidance of the Commission in determining the date and location of the next FAC meeting.

9.2 Selection of Chair and Vice-Chair

18. ***Recommendation:*** The FAC recommended to the Commission that Dr. Bai Li be selected as the Chair of the FAC and that Mr. Takumi Fukuda be selected as the Vice-Chair.

Agenda Item 10. Adoption of the Report

19. The report was adopted by consensus.

Agenda Item 11. Close of the Meeting

20. The FAC meeting closed at 17:58 on 2 July 2018.

Annexes

Secretariat Work Plan 2018

NPFC budget and estimates for fiscal years 2018 to 2021 and Members' contributions

Staff Selection Process

Recommendations from the 2nd Finance and Administration Committee Meeting

Annex

SECRETARIAT WORK PLAN 2018

ABSTRACT

This paper addresses a work plan for 2018 fiscal year for four key areas based on the Secretariat's Work Plan 2016-2019 presented at the 2nd Commission meeting*;

(a) Coordination of scientific activities of the Commission;
(b) Coordination of compliance activities and operational reporting to the Commission;
(c) Data management and security;
(d) Provision of finance and administration services to support the Commission in the execution of management work plan

* It should be noted that the Secretariat work planning exercise is hampered by the timing of the subsidiary meetings. Only the Scientific Committee has met and endorsed its work plan for 2018. The Finance and Administration Committee has not met so only reports and proposed budgets can be presented at this time. The Technical and Compliance Committee has not met so compliance specific activities in 2018 have not yet been established by TCC consequently the list of Secretariat's intended activities in this sector is only tentative.

DETAILS:

The function of the NPFC Secretariat is the provision of services to, and representation of the Commission as determined by its Members in accordance with the Convention and relevant rules and regulations. As identified by the Secretariat and shared with Members, four key areas highlighted below provide the Secretariat and the Commission guidance with regard to the Commission's activities in 2018 financial year.

I. Coordination of scientific activities of the Commission

The Secretariat coordinates the scientific activities of the Commission including:

(a) Implementation and revision, when necessary, of the Scientific Committee Five-Year Work Plan 2017-2021 for each Priority Area:
- Stock assessments for target fisheries and bycatch species
- Ecosystem approach to fisheries
- Data collection, management and security

(refer to Annex of the 3rd SC Report for details).

(b) Contributing to a report from the NPFC/FAO VME workshop to be published by FAO as a Fisheries and Aquaculture report.
(c) Assisting Members to develop a VME identification field guide
(d) Assisting Members to develop a GIS database for the spatial management of bottom fisheries and VMEs.
(e) Assisting a Small Working Group to develop joint spatial/temporal map of Members' catch and effort on Pacific saury
(f) Assisting Small Working Groups to develop data reporting templates for bottom fisheries and chub mackerel
(g) Coordinating two meetings of the Technical Working Group on Pacific Saury Stock Assessment (TWG PSSA) to be held in China in November 2018 and in Japan in March 2019.
(h) Coordinating a meeting of the Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA) to be held in Japan in March 2019.
(i) Coordinating a Workshop to address data requirements and data sharing for SAI assessment and other tasks identified in the Work Plan by SSC VME and SSC BF to be held in China in November 2018 in conjunction with TWG PSSA.
(j) Coordinating a Workshop on biological reference points (RP), harvest control rules (HCR) and management strategy evaluation (MSE) to be held in Japan in March 2019 in conjunction with TWG PSSA and TWG CMSA meetings.
(k) Assisting Members in identifying data gaps which can be fulfilled by an observer program.
(l) Liaising an expert to provide Members with literature review of target and limit reference points used in pelagic species fisheries by other general RFMOs and other fishery management bodies.
(m) Coordinating intersessional work of the SC subsidiary bodies including development of operating model for chub mackerel, revision of the Interim Guidance for Management of Scientific Data, data preparation for stock assessment of priority species and VMEs.
(n) Coordinating scientific projects to be conducted during 2018 and 2019.

#	Project	Time	Rough estimation of required funds
1	VME identification guide	2017-2020	*2018 FY: No funds required.* *2020: printing costs TBD.*
2.1	GIS database/module as a part of NPFC database management system	2018-2019	*2018 FY: 7,220USD carried over from 2017 FY SC budget.*
2.2	Joint spatial/temporal map of Members' catch and effort on Pacific saury	2018-	*2018 FY: 0.5 mln JPY (~5,000USD)*
3	TWG PSSA meeting (meeting costs)	Every year, 2017-2021	Data preparation meeting, Nov 2018 (4 days), China. *2.2mln JPY (20,000USD)** SA meeting, Mar 2019 (4 days), Japan. *2.2mln JPY (20,000USD)**
4	TWG CMSA meeting (meeting costs)	Every year	Mar 2019 (3 days), Japan *2.2mln JPY (20,000USD)**
5	Data Workshop for SSC VME and SSC BF	Nov 2018	Nov 2018 (4 days), China. *2.2mln JPY (20,000USD)**
6	Workshop on biological reference points (RP), harvest control rules (HCR) and management strategy evaluation (MSE) (meeting costs and invited experts)	Mar 2019	Mar 2019 (2 days), Japan *2.2mln JPY (20,000USD)**
7	Expert to review Pacific saury stock assessment (consultant fee and travel cost)	TBD later	*2018 FY: No funds required.*
8	Observer Program	2018-	Identify data gaps which can be fulfilled by an observer program. *2018 FY: No funds required.*
9	Literature review of target and limit reference points (consultant fee and travel cost)	2018	By Sep-Oct 2018 *2018 FY: 1.1 mln JPY (10,000USD)*
10	Promotion of cooperation with NPAFC including macro-scale multinational survey in the North Pacific in 2020	2019	*TBD.*

II. Coordination of compliance activities of the Commission

* Note that compliance specific activities in 2018 have not yet been established by TCC consequently the list of Secretariat-intended activities in this sector is only tentative.

The Secretariat coordinates compliance activities of the Commission including:

(a) Implementation of compliance work plan and priorities through the establishment of SWGs for the following topics adopted at the 2nd TCC held in 2017 including;
- Initial VMS study completed with a possibility that national VMS can be integrated into
  a regional system and implemented
- Moving the Vessel Registry to an online Direct Vessel Entry system
- Assessing compliance of CMMs by Members, with an initial focus on the procedures for high seas boarding and inspection (HSBI) to set common standards for operations of the CMM which came into force on 28 November 2017.

(b) Development of a NPFC compliance monitoring system (CMS) for 2019-2020 fiscal year, building on the experiences of other RFMOs who are currently reviewing and amending their CMSs for submission to TCC, its endorsement and Commission approval;

(c) Review of existing CMMs for revision and consideration of new CMMs, if any, from Members;

(d) Maintain the vessel register and interim non-member carrier vessel register for Members, and initiation of transition to *a system for direct entry of vessel data* by Members in 2018.
- Assist Members in all direct entry processes through direct entry training using the training server on the website combined with Secretariat support.

(e) Preparing the e-IUU vessel system, electronic entry of scientific data and annual reports, setting up an e-CMS, e-annual report system, and development of the data warehouse to assist the Commission in the analysis of the data, and more.

(f) Coordinate the e- IUU vessel listing process from data submitted by Members.

(g) Other tasking to be set at the 3rd TCC meeting in June 2018.

III. Data management and security

The data management system is the core for the storage of data and the analyses of scientific and compliance operations of the Commission, consequently, significant effort is being placed on the development of this system. The intent of the NPFC Database is to: provide a secure, user-friendly,

accessible, and reliable database for all scientific and compliance needs of the Commission, one that is fully integrated with other data modules of the Commission so as to continually support Members' efforts to provide appropriate and timely management advice to the Commission.

(a) Based on the discussions during the SSC VME and BF Meetings held in April 2018, Members will collaborate with the Secretariat to develop an online NPFC Map for Spatial Management of VMEs and Bottom Fisheries in the Convention Area as part of the NPFC Data Management System. Members will form an intersessional group to decide on the specifications of the system to accommodate the needs of the Scientific Committee.

(b) The on-going discussion on the development of a regional Vessel Monitoring System (VMS) by the TCC SWG VMS is set to recommend the implementation of the NPFC VMS, but the scope and the timing of deployment is to be determined by Members.

(c) The draft of the NPFC Information Security Guidelines discussing the framework for NPFC data sharing and publication is being addressed by the SC and TCC and will need to be merged into a final guideline by the Members.

(d) Other tasks related to spatial management, e-annual report, e-IUU vessel system etc. based on the Commission decisions after consideration of the SC and TCC reports.

IV. Finance and Administration

1. Financial matters to support the Secretariat and Commission in the execution of its duties

Securing funds for the Commission's activities and implementation of approved activities through formal and internationally recognized financial mechanisms is one of the areas for the Secretariat to assist Members and the Commission to achieve objectives of the Convention.

Given that the Commission is entering its third year of operation, there is still an urgent need for initial investment by Members for its establishment to address the challenges commonly faced by RFMOs during development. Following the Secretariat's work plan 2016-2019, the Secretariat highlights the following as major financial activities for 2018:

(a) Drafting a four-year budget plan 2018-2021 for approval at the 4th Commission meeting;

- Adjustment of the 2018 budget expenditures based on actual expenditures during 2017, and development of a proposed 2019 budget and budget forecast for 2020 and 2021;

(b) Drafting a supplementary report to assist Members in financial consideration to implement recommendations presented in the Salary Consultancy report.

(c) Submission of the external Auditor's Report for the Commission's 2017 financial affairs

2. Provision of administrative services to the Commission and its subsidiary bodies

1) Host Commission meetings

The Secretariat assists Members to host Commission meetings, subsidiary body meetings and workshops and working group meetings.

(a) Scientific Meetings (09-20 April 2018, Tokyo, Japan)

(b) Annual Meetings (28 June - 05 July 2018, Tokyo, Japan)

- 3rd Technical and Compliance Committee (TCC), 28-30 June 2018
- 2nd Finance and Administration Committee (FAC), 02 July 2018
- 4th Annual Session of the Commission, 03-05 July 2018

(c) Workshops and Technical Working Group meetings

- VME&BF Data Workshop and TWG PSSA03 (7-15 November 2018, China)
- TWG PSSA04, TWG CMSA02, and BRP/HCR/MSE Workshop (March 2019, Japan)

(d) Compliance SWGs/Workshops pending decisions from TCC.

2) Maintenance of NPFC Website and development of web-based systems

The Secretariat launched a number of web-based tools under the npfc.int domain name and it is now up and running. Please visit https://www.npfc.int/.

(a) The Vessel Registry Direct Entry System (https://www.npfc.int/compliance/vessels) makes it possible for members to directly register newly authorized vessels, as well as update and delete records in the official NPFC vessel database. The Secretariat encourages all Members to assign at least one Vessel Manager to oversee the registration of their authorized vessels.

(b) The NPFC Collaboration (https://collaboration.npfc.int/) provides a secure space for authenticated Members' representatives to share documents and data and discuss Science and Compliance-related issues. Users need to sign up for individual accounts to access the discussion forum.

(c) The NPFC Geoserver (http://gis.npfc.int/geoserver/web/) was launched to be the prototype of the NPFC Map for Spatial Management of VMEs and Bottom Fisheries.

This site will see major changes once the Members decide on the features to be installed in this system.

(d) Further improvements of the meeting registration process, user management and other tasks based on the Commission decisions.

3) Cooperation with other organizations

The Secretariat currently liaises with other organizations including RFMOs by attending meetings for information sharing and for developing other joint or reciprocal activities of mutual interest. In 2018, the meetings attended and scheduled to be represented by Secretariat staff are as follows:

(a) PICES International Symposium on Understanding Changes in Transitional Areas of the Pacific (24-26 April 2018, Mexico)
(b) Annual meeting of the NPAFC (20-27 May 2018, Russia)
(c) UN Fish Stock Agreement (22-23 May 2018, USA)
(d) Regional Secretariat Network/FAO Committee on Fisheries (08-14 July 2018, Italy)
(e) WCPFC meetings (SC, 8-16 August 2018, Korea; COM, 2-7 December 2018, Micronesia)
(f) UN-BBNJ (4-17 September 2018, USA)
(g) Annual meeting of NAFO (17-21 September 2018, Estonia)
(h) Annual meeting of PICES (25 October - 04 November 2018, Japan)
(i) Annual Meeting of SPRFMO (23-27 January 2019, Netherlands)
(j) Further representation will be determined at TCC, FAC and the Commission Meetings

Besides attendance at the meetings, there are areas for cooperation with other organizations, which require further consideration and input from the Commission:

(a) Memorandum of Understanding (MOU) between NPFC and NPAFC is under discussion
(b) Joint multinational research survey in the North Pacific planned in 2019-2021 under the International Year of Salmon project of NPAFC to collect new data on species of NPFC's interests
(c) NPFC-PICES working group has begun to work on potential areas of cooperation and will continue working intersessionally and at the October Annual Meeting of the PICES in Yokohama, Japan.
(d) Cooperation for compliance purposes to be determined by TCC and the Commission, e.g., NPAFC for air surveillance, USCG and Japan for HSBI, All members for VMS;

Outside service providers for AIS and maritime intelligence services (Lloyd's Intelligence Service), etc.

4) Enhance public awareness

The Secretariat enhances public awareness through various means:

(a) Update NPFC brochures for display at the Secretariat office for visitors

(b) Maintain and update official website to provide the public information on Commission's activities

(c) Give lectures and seminars relevant to NPFC work upon request from local government or universities and international fora

(d) Submit articles to newsletters of RSN and RFMOs

(e) 3rd NPFC Yearbook will be published by the 2019 Commission meeting

(f) Receive visitors from local government, embassies, universities and international organizations

5) Management of human resources

Effective management of human resources intends to maximize employee performance while considering the best economic use of the resources of the Commission. According to the Secretariat's Work Plan and Commission's decision, the Secretariat will coordinate the following:

(a) Developing a plan for implementing a 360-degree performance review involving mutual performance reviews among Secretariat staff as soon as is practical, no later than the 3rd FAC meeting. A summary of the performance reviews will be provided to the Commission at the Heads of Delegations meeting;

(b) Use contractual services for interim periods as required for special tasking;

(c) Manage the secondment and interns from Members for up to a one-year, or six-month period respectively, through advertisement and selection guidelines set by the Commission, after consideration and approval by the Commission.

Attachment:

Timeline for Commission's activities and budget estimate in 2018 financial year

Activity	2018 fiscal year												Budget (JPY)
	2018 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Jan	Feb	Mar	
Science								Data/PS				RP/CM/PS	12.8mil
Compliance													8.7mil
Data													6.6mil
Meetings	SC		TCC/FAC/COM										7.5mil
Website													1.3mil
Cooperation	PICES	NPAFC UNFSA		RSN/COFI	WCPFC	NAFO	PICES		WCPFC	SPRFMO			4.7mil+**
Public													1 mil
Human													17mil

*meetings decided by the Commission

Annex

NPFC adjusted budget for 2018 and the proposed budget for 2019

Items	Year 2018	Year 2019
	Cost (JPY)	Cost (JPY)
1. PERSONNEL COSTS		
1.1-1.6 Staff Remuneration	55,202,956	56,859,043
1.7 Temporary Services	1,243,600	1,243,600
1.8 (a) Social Security & Insurance	11,565,480	11,565,480
1.8 (b) Pension Costs		
1.8 (C) Tax Reimbursement	-	-
1.9 Overtime	746,160	746,160
1.10 (a) Staff Allowances - Home Leave	300,000	746,160
1.10 (b) Staff Allowances – Relocation	-	1,100,000
1.10 (C) Staff Allowances – Repatriation	-	500,000
1.10 (d) Staff Allowances - Accommodation Subsidy	7,461,600	7,461,600
1.11 Professional Development / Training	1,641,552	1,641,552
1.12 Education Fee	5,223,120	5,223,120
1.13 Separation Allowances	-	-
2. OTHER SERVICE COSTS		
2.1 Office Equipment & Furniture	2,487,200	2,487,200
2.2 Office Supplies	1,243,600	1,243,600
2.3 Rentals	-	-
2.4 Communications	994,880	994,880
2.5 Printing	1,492,320	1,492,320
2.6 Duty Travel	6,839,800	6,839,800
2.7 Auditing	746,160	870,520
2.8 Contractual Services	23,218,000	19,587,000
2.9 Database Management	6,591,000	6,591,000
2.10 MCS Costs	8,705,200	8,705,200
2.11 Meeting Costs & Workshops	7,461,600	7,461,600
2.12 Science Support	12,787,000	12,787,000
2.13 Staff Recruitment & Hiring	248,720	248,720
2.14 To / From Working Capital Fund	-	-
2.14 bis To/From Special Project Fund		-
2.15 Representation Expenses	248,720	248,720
2.16 Miscellaneous	822,735	627,128
TOTAL	**157,271,403**	**157,271,403**

Working Capital Fund (cumulative)	60,909,508	60,909,508
Special Project Fund (cumulative)	20,176,776	20,176,776

Table of Member contributions, 2018 (JPY)

Member\Rule	a)	b)	c)	Fixed Contribution	Total	%
Canada	5,663,570	3,728	2,815,591		8,482,889	5
China	5,663,570	32,046,379	541,665		38,251,613	24
Korea	5,663,570	1,715,198	1,836,044		9,214,813	6
Russia	5,663,570	802,144	596,502		7,062,216	4
Chinese Taipei	5,663,570	26,898,873	1,500,117		34,062,560	22
USA	5,663,570	0	3,841,319		9,504,889	6
Vanuatu	5,663,570	832,949	195,902		6,692,422	4
Japan				44,000,000	44,000,000	28
Total	39,644,991	62,299,272	11,327,140	44,000,000	157,271,403	100

Table of Member contributions, 2019 (JPY)

Member\Rule	a)	b)	c)	Fixed Contribution	Total	%
Canada	5,663,570	5,954	2,815,591		8,485,115	5
China	5,663,570	37,836,207	541,665		44,041,442	28
Korea	5,663,570	1,497,062	1,836,044		8,996,676	6
Russia	5,663,570	619,216	596,502		6,879,288	4
Chinese Taipei	5,663,570	21,380,721	1,500,117		28,544,408	18
USA	5,663,570	0	3,841,319		9,504,889	6
Vanuatu	5,663,570	960,112	195,902		6,819,585	4
Japan				44,000,000	44,000,000	28
Total	39,644,991	62,299,272	11,327,140	44,000,000	157,271,403	100

NPFC budget estimates for fiscal years 2020 and 2021

Items	Year 2020 Estimated	Year 2021 Estimated
	Cost (JPY)	Cost (JPY)
1. PERSONNEL COSTS		
1.1-1.6 Staff Remuneration	58,564,812	60,321,754
1.7 Temporary Services	1,243,600	1,243,600
1.8 (a) Social Security & Insurance	11,565,480	11,565,480
1.8 (b) Pension Costs		
1.8 (C) Tax Reimbursement	-	-
1.9 Overtime	746,160	746,160
1.10 (a) Staff Allowances - Home Leave	300,000	746,160
1.10 (b) Staff Allowances – Relocation	1,100,000	500,000
1.10 (C) Staff Allowances – Repatriation	500,000	500,000
1.10 (d) Staff Allowances - Accommodation Subsidy	7,461,600	7,461,600
1.11 Professional Development / Training	1,641,552	1,641,552
1.12 Education Fee	5,223,120	5,223,120
1.13 Separation Allowances	-	-
2. OTHER SERVICE COSTS		
2.1 Office Equipment & Furniture	2,487,200	2,487,200
2.2 Office Supplies	1,243,600	1,243,600
2.3 Rentals	-	-
2.4 Communications	994,880	994,880
2.5 Printing	1,492,320	1,492,320
2.6 Duty Travel	6,839,800	6,839,800
2.7 Auditing	870,520	870,520
2.8 Contractual Services	18,654,000	17,410,400
2.9 Database Management	6,591,000	6,591,000
2.10 MCS Costs	8,705,200	8,705,200
2.11 Meeting Costs & Workshops	7,461,600	7,461,600
2.12 Science Support	12,787,000	12,787,000
2.13 Staff Recruitment & Hiring	248,720	0
2.14 To / From Working Capital Fund	-	-
2.14 bis To/From Special Project Fund	-	-
2.15 Representation Expenses	248,720	248,720
2.16 Miscellaneous	300,519	189,737
TOTAL	**157,271,403**	**157,271,403**

Working Capital Fund (cumulative)	60,909,508	60,909,508
Special Project Fund (cumulative)	20,176,776	20,176,776

Annex

NPFC Staff Selection Process

Abstract

The Working Paper is to suggest a selection process of the NPFC Secretariat staff, including the term(s) of the staff appointed for Members' consideration.

Introduction

NPFC Convention Article 5.9 and Staff Regulations 6, and Rules of Procedure 2.6, address the recruitment and appointment of Executive Secretary and staff, but do not specify the terms of staff and detailed process for selection of staff members. In the case of the Executive Secretary, his or her term of office shall be for four years, and he or she may be eligible for re-appointment, but shall not serve for more than eight (8) years unless otherwise decided by the Commission. There are no such rules available to other staff members hired by the Executive Secretary in accordance with Rule 6.2 and 6.4 of the Rules of Procedure of the Commission, except that the Executive Secretary shall appoint, direct, and supervise staff. It is the current practice that when staff members were hired, the Executive Secretary has made a contract with each Professional Staff for a four-year term, with the possibility of another four-year appointment depending on annual performance during the term of the staff. A similar principle was applied to General Staff who were appointed for a period of four (4) years initially, and the contract may be renewable for further periods based on the needs of NPFC, its funding situation and work performance during the term.

As the first term of the current four incumbents including the Executive Secretary ends during September 2019 - March 2020, it is suggested that the Commission provide transparent and clear guidelines for the Executive Secretary to ensure he/she is prepared for possible future selection of new staff Members.

The recent Salary Consultancy (NPFC-2018-FAC02-WP03) has also pointed out the lack of guidance on the term(s) of staff so recommended that the Commission give further consideration to the tenure of its staff, with a range of options practiced within other RFMOs. Therefore, the Secretariat suggests the following selection process of the NPFC Secretariat staff, including the term(s) of the staff appointed for Members' consideration.

Process for Hiring Staff Members

1) Executive Secretary

The Executive Secretary shall be hired by the Commission according to such procedures and on such terms and conditions to be decided by the Commission (Article 5.9 of the Convention, paragraph 6.1 Staff Regulations and paragraph 6.1 of the Rules of Procedure). The selection, interview and appointment process for the Commission's Executive Secretary is as follows:

Position documentation and advertisement.

Prior to advertising the vacancy, the Secretariat, in consultation with the Chair of the Commission, will prepare a draft position description for the post of Executive Secretary and a draft advertisement. These will be provided to the Members of the Commission for approval. The Secretariat will post the approved advertisement and position description on the NPFC website and in national and international publications and websites not less than one hundred and eighty (180) days before the coming Commission meeting. The recruitment page on the NPFC website will include relevant information regarding the vacancy and the application process. The deadline for applications to be received by the Secretariat shall be no less than 60 days after the advertisement has been placed on the website.

Submission of applications

Applications, as well as referee comments, must be submitted in the English language by eligible persons to the Chair through the Secretariat in electronic format.

Availability of applications

The Secretariat will circulate the applications received to all Members of the Commission.

Ranking of applicants

Each Member will provide to the Secretariat a list of their top five preferred applicants, in rank order, within 30 days of the distribution of the applications by the Secretariat. The Secretariat will prepare a composite list of the candidates based on the lists provided by the Members. In doing so, the Secretariat will aggregate individual applicants' rankings, awarding 5 points for a first preference, 4 points for second preference, etc.

Shortlist

The candidates with the five highest aggregate scores will be shortlisted for selection. Should the application of any candidate be withdrawn, the next ranking candidate will be substituted.

Interview process

The top five candidates will be invited to attend the Commission meeting for interviews. They will be interviewed by the Members during the Heads of Delegation meeting in the margins of the Commission meeting. Members will agree in advance on a set of questions that will be presented to each candidate. Following the interviews, each Member will once again be consulted as to its preferred candidates. If no candidate is the preferred candidate of a majority of the Members, the candidate with the lowest level of support will be dropped from the list and the voting process repeated until one candidate receives majority support. Upon identification of the preferred candidate in accordance with above process, the Commission shall appoint the Executive Secretary with the approval of the Contracting parties.

Appointment Process of the Executive Secretary

The chosen candidate will be notified at the conclusion of the Commission's meeting. Contract negotiations are to be conducted by the Commission's Chair. If possible, the chosen candidate will report to the Secretariat Office two full weeks before the departure of the incumbent Executive Secretary in order to allow for a transition.

Acting Executive Secretary

If the position of Executive Secretary shall become vacant during the intersessional period or if the Executive Secretary is unable to act, his/her powers and duties shall be assumed by one of the professional staff members designated by the Chair of the Commission until such time as a successor is appointed or the Executive Secretary is able to act. If appointed for longer than four weeks, the Acting Executive Secretary shall be compensated at the lowest increment of the salary scale for an Executive Secretary if the lowest increment is higher than the Acting Executive Secretary current salary.

2) Staff Members

The power of appointment of staff members rests with the Executive Secretary (Staff Regulations 6.2) and shall ensure that these processes are transparent, equitable and based on merit. Prior to advertising the vacancy, the Secretariat, in consultation with the Chair of the Commission, will prepare a draft position description for the post of the staff member and a draft advertisement. A selection panel, which may involve appropriately qualified and knowledgeable personnel external to the Secretariat, will be appointed by the Executive Secretary, who shall serve as Chair of the

Selection Board, to advise on staff selection. Suitability for recruitment will be assessed in a transparent manner that takes account of (i) the international character of the Commission, (ii) the requirements of the position as described in its Duty Statement, (iii) the qualifications, experience, qualities and capabilities of applicants, (iv) testimonials from the applicant's referees, and (v) other sources of information regarding the applicant's suitability.

Appointment term(s):
Professional staff, other than the Executive Secretary, are appointed for an initial four-year term. Subject to satisfactory performance, and to the needs of the Commission, Professional staff may be re-appointed for a further term of four years. At the conclusion of two terms, the post must be re-advertised. The incumbent is eligible to apply.

General Service staff are initially appointed for a four-year term. Subject to satisfactory performance, and to the needs of the Commission, General Service staff may be re-appointed on an ongoing/permanent basis.

The Executive Secretary may appoint short-term temporary personnel for a specific task following the UN guidelines for such appointments, which is normally six months maximum, and not more than 24 months in total, over a 36 month period, with appropriate breaks, or a maximum of 11 months per year with an appropriate break before any re-hiring to ensure that the short term staff cannot be legally considered as a full time employee nor receive such benefits

Start Salary level:
In accordance with Staff Regulation 6.4, the Executive Secretary shall negotiate with the staff selected for the starting salary level, based on qualifications and experience unless the Commission decides otherwise.

Probation Period:
Staff members selected shall all be subject to a six-month probationary appointment. Upon satisfactory completion of the probationary period, the Executive Secretary shall confirm their appointment and the terms thereof. During that period, either party may terminate the appointment upon one month's written notice.

If the Executive Secretary does not confirm the appointment after the probation period due to poor performance of the selected candidate, staff selection process shall be repeated. The Executive Secretary may seek for consultancy or secondment during this period to ensure effective work of the Secretariat.

Consultants or short-term employees may be dismissed at any time for cause with final compensation subject to the decision of the Executive Secretary in considering the situation for termination of the consultancy.

Members are invited to give guidance on the proposed staff selection process including term(s) of staff members.

Attachment:

1) List of current NPFC staff (5)

Position	Categories	Term (4 years)
Executive Secretary	Professional Staff, D1	3 Sep 2015 – 2 Sep 2019
Compliance Manager	Professional Staff, P4	3 Feb 2016 – 2 Feb 2020
Science Manager	Professional Staff, P4	1 Apr 2016 – 31 Mar 2020
Executive Assistant	General Service Staff	11 Jan 2016 – 10 Jan 2020
Data Coordinator	General Service Staff	1 Apr 2017 – 31 Mar 2021

2) Term of Staff Members of other RFMOs

RFMOs	Executive Secretary	Professional staff	General Staff
WCPFC	4+4 years maximum	4+4 years, re-advertize The incumbent is eligible to apply	4 years and may be extended for a term or terms subject to work programme requirements, funding, and performance
SPRFMO	4+4 years maximum	Open-ended contract	Open-ended contract
CCAMLR	4+4 years maximum	4+4 years, re-advertize The incumbent is eligible to apply	4 years and may be extended for a term or terms subject to work programme requirements, funding, and performance
NPAFC	4+4 years maximum	3 years and may be extended for a term or terms	Permanent position
NAFO	4+4 years maximum	Permanent position	Permanent position
CCSBT	3 years with the possibility of renewal subject to a consensus decision of the Commission	3 years with the possibility of renewal subject to decision of the Executive Secretary.	3 years with the possibility of renewal subject to decision of the Executive Secretary.
IOTC	3+3+3 depending on performance (And may re-apply in a competitive process after 9 years)	Extendable contracts, depending on funding and performance.	Extendable contracts, depending on funding and performance.

Annex

Recommendations from the 2nd Finance and Administration Meeting to the Commission

(Agenda 4)

(a) The FAC recommended that the Commission approve the recommendation from the auditor that the Working Capital Fund be capped at 6 months.

(Agenda 5)

(b) The FAC recommended that the Commission adopt the revised work plan (Annex).

(c) The FAC recommended that the Commission task the Executive Secretary to provide detailed reports of the implementation of the Secretariat's Work Plan at future FAC meetings.

(d) The FAC recommended that the Commission adopt the adjusted budget for 2018 and the proposed budget for 2019 (Annex).

(e) The FAC recommended that the Commission request that in the future, the Secretariat should also present the budgeted expenses on a consolidated basis for ease of understanding (e.g. costs associated with SC and TCC, including consultancy, meeting costs, etc.).

(Agenda 6)

(f) The FAC recommended that the Commission task the Secretariat to draft a paper outlining the general understanding of the strategic aim of the NPFC, based on which the NPFC will establish a study group led by Heads of Delegations to establish the Strategic Plan of the NPFC.

(g) The FAC recommended that the Commission task the Secretariat to develop a plan for implementing a 360-degree performance review involving mutual performance reviews among Secretariat staff as soon as is practical, no later than the 3rd FAC meeting.

(h) Regarding the financial work of the Secretariat, the FAC recommended that the Commission not adopt the consultant's recommendation of creating a new position of Administrative and Finance Officer that would combine the positions of the Executive Assistant and Finance Coordinator positions, nor hire a Finance Coordinator as was originally decided by the Commission at its 3rd meeting. Instead, any support for financial work should be procured from an external service provider contractually, with the costs being covered under General Service Category 3 of the NPFC budget. Any leftover funds should be provided to the Working Capital Fund or the Special Projects Fund.

(i) The FAC recommended to the Commission that there should not be automatic progression from one staff grading to the next.

(j) The FAC recommended that the Commission adopt the revised draft employment process.

(Agenda 7)

(k) The FAC recommended that the Commission task the Secretariat to work in coordination with the Small Working Groups of the TCC to support the High Seas Boarding and Inspection Implementation Plan and other work of the TCC.

(Agenda 9)

(l) The FAC requested the guidance of the Commission in determining the date and location of the next FAC meeting.

(m) The FAC recommended to the Commission that Dr. Bai Li be selected as the Chair of the FAC and that Mr. Takumi Fukuda be selected as the Vice-Chair.

4th Commission Meeting

3-5 July 2018
Tokyo, Japan
Meeting Report

4th Commission Meeting

Agenda

Agenda Item 1. Opening of Meeting
- 1.1 Welcome Address
- 1.2 Appointment of Rapporteur
- 1.3 Adoption of Agenda
- 1.4 Meeting Arrangement

Agenda Item 2. Membership of the Commission

Agenda Item 3. Report from the Secretariat

Agenda Item 4. Report of the 3rd Scientific Committee meeting

Agenda Item 5. Report of the 3rd Technical and Compliance Committee meeting

Agenda Item 6. Report of the 2nd Finance and Administration Committee meeting

Agenda Item 7. Conservation and Management Measures
- 7.1 Review of the CMMs and the recommendations by the Committees
- 7.2 Amendments/addition of CMMs

Agenda Item 8. Adoption of budget
- 8.1 Proposed budget for 2019
- 8.2 Indicative budget for 2020 and 2021

Agenda Item 9. Data Management and Security
- 9.1 Progress in Development of NPFC Data Management System
- 9.2 NPFC Information Security Guidelines

Agenda Item 10. Cooperation with other organizations
- 10.1 FAO/ABNJ project
- 10.2 NPAFC
- 10.3 PICES
- 10.4 Future cooperation opportunities

Agenda Item 11. Other matters

11.1 Selection of the Executive Secretary

11.2 Secondment and Intern for 2018

11.3 Others

Agenda Item 12. Date and Place of next meeting

Agenda Item 13. Adoption of the report

Agenda Item 14. Close of Meeting

MEETING REPORT

Agenda Item 1. Opening of Meeting

1. The 4th Meeting of the North Pacific Fisheries Commission (NPFC) took place in Tokyo, Japan on 3-5 July 2018, and was attended by Members from Canada, China, Japan, the Republic of Korea, the Russian Federation, Chinese Taipei, the United States of America, and Vanuatu. The European Union (EU), the North Pacific Anadromous Fish Commission (NPAFC), the Deep Sea Conservation Coalition (DSCC), Global Fishing Watch, the Organization for Regional and Inter-regional Studies (ORIS) of Waseda University, and WWF Japan attended as observers. The meeting was opened by Mr. Kenji Kagawa (Japan), who served as the Commission Chair.

1.1 Welcome Address

2. Mr. Shigeto Hase, Director-General, Fisheries Agency of Japan gave a welcome address. He expressed his hope for fruitful discussions on a number of significant issues, including the management of Pacific saury, which is a very important resource for Japan. Another major challenge for the NPFC is the combatting of illegal, unreported and unregulated (IUU) fishing activities, which continue to occur on the high seas. Finally, Mr. Hase expressed his hope for a productive meeting based on a shared recognition of the importance of the sustainable management of fisheries resources in the NPFC Convention Area.

1.2 Appointment of Rapporteur

3. Mr. Alexander Meyer was appointed as the Rapporteur.

1.3 Adoption of Agenda

4. The agenda was adopted without revision

1.4 Meeting Arrangement

5. The Chair outlined the procedural matters for the holding of the meeting.

Agenda Item 2. Membership of the Commission

6. The Republic of Korea, as the Depositary of the NPFC, provided an update on the status of the Convention. Since the previous NPFC meeting, the total number of Members remains at eight. The EU has applied for accession to the NPFC Convention.

7. The EU was invited to give a presentation to explain its intentions in applying for accession to the Convention (NPFC-2018-COM04-OP01). The EU explained that it wishes to fish for chub mackerel and possibly also Japanese sardine in the Convention Area, operating two mid-water pelagic trawlers that currently fish in the Convention Area of the South Pacific Regional Fisheries Management Organisation (SPRFMO). The EU intends to fish these resources in a sustainable manner, respecting the NPFC Convention and all the Conservation and Management Measures (CMMs) established by the NPFC. The EU believes that its Membership in the NPFC could contribute to the NPFC's scientific work, particularly through its vessel self-sampling program and acoustic surveys, as well as to compliance matters, including through its expertise in monitoring and control schemes and combatting IUU fishing activities. Furthermore, the EU would also be able to support the NPFC financially, not only through Membership contributions but also through voluntary contributions such as financial assistance for areas of need in the NPFC's scientific program.

8. Upon considering the EU's application, the Commission noted that it lacks sufficient information to make a determination at this point in time. Therefore, the Commission recommends that the EU submit all information stipulated in Rule 10 of the NPFC Rules of Procedure in its application to become a Contracting Party to the Convention or to attain the status of Cooperating non-Contracting Party (CNCP). In addition, the Commission requests that the EU submit detailed fishing plans specifying vessels and target species. The EU can apply to become a Contracting Party or a CNCP. Any application to become a Contracting Party should be submitted to the Commission in advance of the Commission meeting. Any application for CNCP status should be submitted to the TCC at least 60 days in advance of the TCC meeting. An application for CNCP status would not preclude consideration as a Contracting Party. The Commission would make any determination on membership or CNCP status at its next Commission meeting.

9. The EU made a follow-up statement to the Commission's response (Annex).

Agenda Item 3. Report from the Secretariat

10. The Secretariat presented an annual report on the Commission's activities for the intersessional period between the 3rd Commission Meeting of July 2017 and this current Commission meeting (NPFC-2018-AR Secretariat).

Agenda Item 4. Report of the 3rd Scientific Committee meeting

11. The Chair of the Scientific Committee (SC), Dr. Joji Morishita (Japan), summarized the outcomes of the 3rd SC meeting (NPFC-2018-SC03 Final Report) for discussion by the Commission.

12. With regard to paragraph 44, subparagraph (c), the Commission requested that the SC hold further discussions addressing the following two points:

    (a) Determine whether or not the current indicator taxa are sufficient for determining VME;

    (b) Determine whether or not the practices of the NPFC in relation to VME in the Convention Area are consistent with that of other regional fisheries management organizations (RFMOs), and, if they are not, provide a rationale for why that is the case.

13. Concerning paragraph 44, subparagraph (i), further discussions were held under Agenda 9.2.

14. With regard to paragraph 44, subparagraph (k), the Commission recognized the need to further consider the provision of support for the Secretariat in relation to organizing and holding the many scientific meetings, including from Members and existing Commission resources.

15. Concerning the holding of the various scientific meetings, the United States requested that the Secretariat continue to endeavor to schedule multiple meetings in conjunction so as to minimize the number of overseas trips that Members are required to make.

16. Regarding Pacific saury, the Commission requested the SC and its subsidiary SSC to work to provide consensus stock assessments for Pacific saury beginning in 2019 in order to advance efforts to ensure the sustainable management of the Pacific saury stock as described in the SC Work Plan.

17. The Commission adopted the report and the recommendations of the SC.

Agenda Item 5. Report of the 3rd Technical and Compliance Committee meeting

18. The Chair of the Technical and Compliance Committee (TCC), Dr. Robert Day (Canada), summarized the outcomes of the 3rd TCC meeting (NPFC-2018-TCC03 Final Report) for discussion by the Commission.

19. The Commission adopted the report and the recommendations of the TCC.

Agenda Item 6. Report of the 2nd Finance and Administration Committee meeting

20. The Chair of the Finance and Administration Committee (FAC), Mr. Kenji Kagawa (Japan), summarized the outcomes of the 2nd FAC meeting (NPFC-2018-FAC02 Final Report) for discussion by the Commission.

21. The Commission adopted the report and the recommendations of the FAC.

Agenda Item 7. Conservation and Management Measures

7.1 Review of the CMMs and the recommendations by the Committees

22. Based on a review of the CMMs and the recommendations by the TCC, the Commission adopted CMM 2018-01 on Information Requirements for Vessel Registration (Annex) and the NPFC IUU Vessel List (Annex).

7.2 Amendments/addition of CMMs

23. The United States briefly outlined its views on the management of North Pacific armorhead and splendid alfonsino and its proposal that the NPFC impose a moratorium on fishing for North Pacific armorhead and splendid alfonsino within the Convention Area until an adaptive management plan can be identified and implemented (NPFC-2018-SSC BF01-WP01). The United States expressed concern about the impacts of harvests in the Convention Area on its domestic fisheries.

24. Japan shared the United States' concern regarding the management of North Pacific armorhead and splendid alfonsino but explained that it could not agree to the United States' proposal as it lacks scientific justification. Instead Japan presented a proposal for the revision of the CMM for bottom fisheries and protection of vulnerable marine ecosystems in the Northwestern Pacific Ocean that incorporates an adaptive management approach and a minimum mesh size for fisheries targeting splendid alfonsino (NPFC-2018-COM04-WP02).

25. Based on the above two proposals, Japan and the United States developed and presented a joint proposal for the revision of the CMM for bottom fisheries and protection of vulnerable marine ecosystems in the Northwestern Pacific Ocean. The Commission reviewed and substantially revised the joint proposal and adopted the revised CMM (Annex).

26. Japan presented two proposals for the conservation and management of Pacific saury: the extension of the existing CMM 2017-08 for Pacific saury (NPFC-2018-COM04-WP01) and the creation of a new CMM containing a scheme of catch limits, work under the scientific guidance of the SC for the development of harvest control rules, and other potential measures (NPFC-2018-COM04-WP03).

27. Japan and Russia made a joint statement as detailed in Annex.

28. The Commission considered the two proposals from Japan. The Commission decided to extend the existing CMM 2017-08 for Pacific saury, while also revising it to incorporate effort controls, measures to prevent the discard of catch, and measures to protect juvenile fish (Annex).

29. Japan expressed its disappointment that the Commission was unable to adopt catch limitation measures, despite receiving the support of many Members and despite the rapidly declining trend in the catch of Pacific saury. Japan believes the NPFC has failed to set appropriate measures for the management of Pacific saury. In accordance with the revised CMM for Pacific saury, Japan strongly hopes that Members will complete a consensus stock assessment and set catch limits for Pacific saury.

30. Chinese Taipei shared the concern of Japan and believes that the NPFC has not adopted sufficient measures for the sustainable management of Pacific saury. Chinese Taipei hopes the situation can be resolved next year and that the NPFC will adopt output controls including the setting of total allowable catch.

31. Noting similarities between the management of Pacific saury and chub mackerel, Japan proposed revising CMM 2017-07 For Chub Mackerel in a similar manner to the revised CMM 2017-08. The Commission agreed to the proposal and adopted the revised CMM (Annex).

Agenda Item 8. Adoption of Budget

8.1 Proposed budget for 2019

32. The Commission adopted the adjusted budget for 2018 and the proposed budget for 2019 as submitted by the FAC (NPFC-2018-FAC02 Final Report).

8.2 Indicative budget for 2020 and 2021

33. The Commission considered the budget estimates for the years 2020 and 2021 as submitted by the FAC (NPFC-2018-FAC02 Final Report).

Agenda Item 9. Data Management and Security

9.1 Progress in Development of NPFC Data Management System

34. The Secretariat presented an update on the progress in the development of the NPFC data management system (NPFC-2018-COM04-WP06). The online Vessel Registry System and an online collaboration portal have been developed and are operational. Systems for an e-IUU Vessel Listing, e-Information Management and e-Reporting for annual reports are under development. Members are considering the development of a regional VMS. A number of new projects have been proposed, including improving upon the existing geospatial mapping of the Convention Area, developing the spatial management of VMEs and bottom fisheries, revamping the Meeting Registration System, and developing a finance and administration data management system. The Secretariat also requested Members to consider a third-party audit and review of current and future system developments through a consultancy to ensure their proper integration.

9.2 NPFC Information Security Guidelines

35. The Commission considered the regulations for management of scientific meeting documents, meeting reports and intersessional communications on the NPFC website proposed by the SC. The Commission recognized the work done by the SC to draft the proposed regulations and encouraged the SC to continue to strive to enhance transparency pursuant to Article 18 of the Convention. The Commission requested the SC and the TCC to hold further discussions on the management of meeting documents, meeting reports and intersessional communications on the NPFC website. The Commission requested the FAC to conduct an intersessional review of the rules of procedure on records and reports, including any suggestions from the SC and the TCC, and present its recommendations to next year's Commission meeting.

36. The Secretariat presented the proposed revision to the Interim Guidance for Management of Scientific Data (NPFC-2018-COM04-WP05). The Commission reviewed and revised the document, and adopted the revised Interim Guidance for Management of Scientific Data (Annex).

Agenda Item 10. Cooperation with Other Organizations

37. The Secretariat provided an update on cooperation with other organizations and suggestions for future collaborative work (NPFC-2018-COM04-WP04).

10.1 FAO/ABNJ project

38. FAO was a primary sponsor of an NPFC/FAO Workshop on VME protection in the NPFC Convention Area, held in Yokohama, Japan, on 12-15 March 2018. FAO will publish a comprehensive report based on the findings and outcomes of the workshop.

10.2 NPAFC

39. The NPFC is engaged in ongoing discussion with the NPAFC for participation in an NPAFC research survey. Work is also ongoing to develop a memorandum of understanding with NPAFC. Additionally, there is the opportunity for the NPFC to cooperate with the NPAFC on air surveillance of the North Pacific by the NPAFC to combat IUU fishing in the Convention Area.

10.3 PICES

40. The NPFC sponsored the PICES symposium on small pelagic fish in 2017 and the PICES symposium on Pacific Transitional Areas in 2018. PICES also participated as a cosponsor in the NPFC/FAO VME workshop. Furthermore, the NPFC and PICES have established a joint NPFC PICES Study Group to identify opportunities for scientific cooperation between the two organizations.

10.4 Future cooperation opportunities

41. The Secretariat explained that there may be opportunities for future cooperation with the Western and Central Pacific Fisheries Commission (WCPFC), SPRFMO, the Northwest Atlantic Fisheries Organization (NAFO), and the Inter-American Tropical Tuna Commission (IATTC).

42. The Commission recognized the potential value of cooperation with other organizations but agreed that any such cooperation must contribute to the mission of the NPFC. The Commission requested that the Secretariat report to the Commission on the purpose and outcomes of any future cooperation with other organizations

Agenda Item 11. Other Matters

11.1 Selection of the Executive Secretary

43. The Commission decided to re-appoint Dr. Dae-Yeon Moon as Executive Secretary for another term of four years. The Commission requested that Dr. Moon continue to enrich communication among Members, enhance the work of the Secretariat, and engage diligently in the tasks requested by the SC, the TCC and the FAC.

11.2 Secondment and Intern for 2018

44. The Secretariat explained that there have been no applicants for the 2018 NPFC Secondment and Internship programs. The funds allocated for these positions will be carried over to next year.

11.3 Others

45. Noting that the terms of the Chair of the Commission will conclude, the Commission requested the Secretariat to conduct a review of the practices of other RFMOs for appointing new Chairs and circulate a paper with that information among Members.

Agenda Item 12. Date and Place of Next Meeting

46. The following schedule and venues were recommended:

    (a) TCC: 11-13 July in Japan;

    (b) FAC and Commission: 15-18 July in Japan; and

    (c) SC and SSCs: In Korea, at a timing to be confirmed in consultation with the SC Chair. Full list of NPFC meetings and workshops is presented in Annex.

Agenda Item 13. Adoption of the Report

47. The report was adopted by consensus.

Agenda Item 14. Close of Meeting

48. The Commission meeting closed at 20:20 on 5 July 2018.

Annexes

Opening Remarks by Japan

EU Statement

CMM 2018-01 On Information Requirements for Vessel Registration

NPFC IUU Vessel List 2018

CMM 2018-05 For Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northwestern Pacific Ocean

Joint Statement of Japan and Russia on the Pacific Saury CMM

CMM 2018-08 For Pacific Saury

CMM 2018-07 For Chub Mackerel

Interim Guidance for Management of Scientific Data Used in Stock Assessments

List of NPFC Meetings and Workshops

FISHERIES AGENCY
MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES, GOVERNMENT OF JAPAN
2-1, 1-Chome, Kasumigaseki, Chiyoda-ku, Tokyo 100-8907 Japan TEL: +81-3-3502-8111 EXT: 6747

NPFC 4th Commission Meeting
Tokyo, Japan
3-5 July 2018

OPENING REMARKS
BY
SHIGETO HASE
DIRECTOR-GENERAL, FISHERIES AGENCY OF JAPAN

Good morning. To mark the opening of the 4th NPFC Commission Meeting, I would like to deliver short remarks. First of all, I am sincerely grateful to all of you for coming all the way to Japan. Although the hot and muggy days continue, I hope you will enjoy staying in Tokyo.

NPFC was established in 2015 and this is already the 4th Commission Meeting. I attended the 2nd Commission Meeting and participated in discussion on conservation and management measures for Pacific saury, chub mackerel and bottom fish, as well as on MCS measures.

This year's Commission Meeting has a number of important agendas. Amongst them, I would like to draw your particular attention to the conservation and management measures for Pacific saury. Last year, Japanese fishermen suffered from a record low catch of Pacific saury. Not only fishermen, but also the general public keenly realized with serious concerns the depleted stock status. Pacific saury is one of Japan's national fish representing the taste of autumn. Pacific saury is essential fish for coastal communities involving fisheries, marketing and processing sectors. Major landing ports of Pacific saury are located in eastern Japan ranging from Hokkaido to Sanriku-Joban area, which were devastated by the Tsunami waves caused by the Great East Japan Earthquake in 2011. Pacific saury plays an important role in restoring those local communities.

Regrettably, the 3rd Scientific Committee was not able to reach a consensus result on Pacific saury stock status. However, the actual catches of Pacific saury by members and research results of the biomass survey clearly show the stock's declining trend. I strongly urge NPFC, as a responsible Regional Fisheries Management Organization, to adopt and implement sound conservation and management measures for Pacific saury as soon as possible.

FISHERIES AGENCY
MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES, GOVERNMENT OF JAPAN
2-1, 1-Chome, Kasumigaseki, Chiyoda-ku, Tokyo 100-8907 Japan TEL: +81-3-3502-8111 EXT: 6747

Measures to prevent, deter and eliminate IUU fishing are also important. While members have committed themselves to refrain from expansion of the number of fishing vessels for Pacific saury and chub mackerel, IUU fishing activities are still relentlessly continuing in the Convention Area, which is an imminent threat in promoting fishery resource management by NPFC. I understand the High Seas Boarding and Inspection Scheme is one of the key issues to be discussed during the meeting. I hope this effective measure will be finalized and be implemented at an earliest timing.

Finally, the meeting is scheduled for three days, I would like to expect Members to share the importance of fishery resources management and have constructive discussions.

The Fisheries Agency of Japan hosts a welcome reception this evening. All of you are invited. I would like to conclude my remarks by wishing Members to spend wonderful time in Japan.

Thank you.

Annex

EU Statement

Mr. Chairman, distinguished delegates, ladies and gentlemen,

Allow us to express our sincere appreciation for the time devoted by this Commission to assess the EU request for Membership of this Commission. And I note, full Membership. This was done despite the heavy agenda of the annual meeting and other very important matters considered by the Commission this week.

Mr. Chairman, Distinguished delegates, it is difficult for us to conceal our disappointment by the decision taken by the Commission not to issue an invitation for the EU to accede to the Convention.

We are also concerned that the provisions of Article 8.3 of the United Nations Fish Stock Agreement (UNFSA) may have been overlooked in this decision.

The NPFC is a young Commission which has provided itself with the essential tools to manage the fisheries. This is remarkable. There are however some pending tasks in terms of, for example, stock assessments and fisheries management that are ongoing. We would like to accompany the efforts of this Organisation with our support and our experience in other fora. We remain convinced that the participation of the EU in the works of this Commission can only be mutually beneficial in terms of improved science, support to compliance processes, further performance and even better governance.

We want to convey our gratitude to those Members who have openly supported the EU request for Membership.

We also want to thank the endeavors from those Members who had objected to our request.

We have taken note of the terms of your decision. Please be reassured that we remain committed to work closer intersessionally with all Members of the Commission towards EU Membership under Article 24 of the Convention. We are also committed to provide the information requested in order to pave the way for a successful EU full Membership of this Commission at the 2019 annual meeting.

Thank you.

Annex

CMM 2018-01

CONSERVATION AND MANAGEMENT MEASURE ON INFORMATION REQUIREMENTS FOR VESSEL REGISTRATION

The North Pacific Fisheries Commission (NPFC),

Recalling Article 4 of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas of 24 November 1993 that stipulates to maintain a record of fishing vessels entitled to fly its flag and authorized to be used for fishing on the high seas, and to take such measures as may be necessary to ensure that all such fishing vessels are entered in that record,

Recognizing Article 7, paragraph 2 (d) of the Convention regarding the establishment of appropriate cooperative mechanisms for effective monitoring, control and surveillance to ensure enforcement of the conservation and management measures adopted by the Commission including mechanisms to prevent, deter and eliminate IUU fishing,

Reaffirming that Article 13, paragraph 1 of the Convention that members of the Commission or Cooperating non-Contracting Parties shall take necessary measures to ensure that fishing vessels entitled to fly its flag operating in the Convention Area comply with the provisions of the Convention and measures adopted pursuant to the Convention and such vessels do not engage in any activities that undermine the effectiveness of such measures and do not conduct unauthorized fishing activities within areas under national jurisdiction of another State adjacent to the Convention Area,

Also reaffirming that Article 13, paragraph 2 of the Convention that no members or Cooperating non-Contracting Parties of the Commission shall allow any fishing vessel entitled to fly its flag to be used for fishing activities in the Convention Area unless it has been authorized to do so by the appropriate authority or authorities of that member of the Commission or Cooperating non-Contracting Parties. Each member of the

Commission, or Cooperating non-Contracting Parties, shall authorize the use of vessels entitled to fly its flag in the Convention Area only where it is able to exercise effectively its responsibilities in respect of those vessels under this Convention, the 1982 Convention and the 1995 Agreement,

Also recognizing that members of the Commission or Cooperating non-Contracting Parties have the need to conduct transshipment with carrier vessels that are flagged to Commission members, Cooperating non-Contracting Parties and non-members,

Noting the decision by the IMO Assembly in its 30th session to expand eligibility for IMO numbers to fishing vessels less than 100 gross tons down to a size limit of 12 meters in length overall authorized to operate outside waters under national jurisdiction of the flag State to assist in identifying and tracking fishing vessels and to tackle illegal, unreported and unregulated fishing,

Adopts the following conservation and management measures in accordance with Article 7, Article 13, paragraph 8 and Article 15 of the Convention:

NPFC Vessel Registry

For the purpose of the effective implementation of the Convention, each Commission member or Cooperating non-Contracting Party shall:

1. Maintain a record of fishing vessels entitled to fly its flag and authorized to be used for fishing activities in the Convention Area in accordance with the information requirements in the Annex.

2. Update pertinent information required from paragraph 1 in the NPFC Vessel Registry established under Article 13, paragraph 10 of the Convention, noting that vessel submissions which do not include the initial data elements as indicated in the Annex will not be accepted by the database.

3. Promptly update the NPFC Vessel Registry with:
   (a) any additions to the record; e.g., new vessel authorizations;
   (b) any modifications to this information with dates of such modifications; and
   (c) any deletions from the record, specifying which of the following reasons is applicable:
      (i) the voluntary relinquishment of the fishing authorization by the fishing

vessel owner or operator;

(ii) the withdrawal or non-renewal of the fishing authorization issued in respect of the fishing vessel under Article 13 paragraph 2 of the Convention;

(iii) the fact that the fishing vessel concerned is no longer entitled to fly its flag;

(iv) the scrapping, decommissioning or loss of the fishing vessel concerned; or

(v) any other grounds, with a specific explanation provided.

4. Provide to the Commission, as part of the annual report required pursuant to Article 16 of the Convention, the names of the fishing vessels entered in the record that conducted fishing activities during the previous calendar year.

Vessel Marking

5. Each Commission Member and Cooperating non Contracting Party shall ensure that every fishing vessel authorized to fly its flag bear markings that are readily identified in accordance with the *FAO Standard Specifications for the Marking and Identification of Fishing Vessels*, and recognize that non-compliance with these standards shall be considered a serious violation according to Article 17, paragraph 5 of the NPFC Convention and Article 21 Paragraph 11(f) of the United Nations Fish Stocks Agreement.

NPFC Interim Register of non-Member[1] Carrier Vessels

6. The Commission hereby establishes an Interim Register of non-members (the "Interim Register"), applicable from 2017 to 2019.

7. Commission Members or Cooperating non-Contracting Parties may use non-member Carrier vessels that are included by the Commission on the Interim Register in the Convention Area to receive transshipments of fisheries resources caught in the Convention Area and from fishing vessels flying the flag of Commission members or Cooperating non-Contracting Parties.

8. Any Commission member or Cooperating non-Contracting Party may at any time enter, in electronic format if possible, the details of any non-member carrier vessels that it wishes to be included on the Interim Register including the information

[1] For the purpose of this CMM, non-members mean those states that are not Commission members or Cooperating non-Contracting Parties

requirements in the Annex and the written undertaking of the owner, operator and Master noted in paragraph 10.

9. The Commission member or Cooperating non-Contracting Parties entering vessels identified in paragraph 8 on the Interim Register shall attest that the vessel or vessels being recommended are not vessels:
   (a) with a history of illegal, unreported or unregulated (IUU) fishing, unless the ownership of the vessel has subsequently changed and the new owner has provided sufficient evidence demonstrating that the previous owner or operator has no legal, beneficial or financial interest in, or control of the vessels, or Commission members or Cooperating non-Contracting Parties concerned is satisfied that, having taken into account all relevant facts, the vessel is no longer engaged in or associated with IUU fishing;
   (b) that are currently listed on any of the IUU vessel lists adopted by regional fishery management organizations (RFMOs);
   (c) that were removed from the Interim Register pursuant to paragraph 16 within one year.

10. It shall be a condition for inclusion on the Interim Register that the owner or manager/operator of the vessel provides a written undertaking, addressed to the Commission, that the owner, manager/operator and master of the carrier vessel will fully comply with all applicable decisions of the Commission, including conservation and management measures. Any reference in Commission decisions to member-flagged vessels shall be construed to include non-member flagged-vessels for the purposes of these written undertakings.

11. It is the responsibility of the owner or manager/operator to ensure that any such undertaking is compliant with domestic laws of its flag State.

12. The Secretariat shall post on the Commission website a list of all the applicable conservation and management measures and other applicable Commission decisions that the written undertaking must cover. It shall be a condition for inclusion on the Interim Register that the owner, manager/operator or master of the carrier vessel, through the Commission member or Cooperating non-Contracting Parties so authorizing the vessel to be on the Interim Register, promptly enter any changes to the information provided under paragraph 8.

13. Failure by the owner, manager/operator or master of a vessel on the Register to fully comply with applicable decisions of the Commission, including conservation and management measures, shall constitute an appropriate basis for placement of such vessel on the Commission's Draft IUU Vessel List in accordance with the relevant conservation and management measure for establishing the NPFC IUU Vessel list.

14. The Commission member or Cooperating non-Contracting Parties listing the non-member carrier vessel on the Interim Register shall also be responsible for providing the information of that vessel in accordance with these conservation and management measures.

15. As soon as possible after entry of complete information under paragraphs 8 and 10 by a Commission member or Cooperating non-Contracting Parties for a non-member carrier vessel on the Interim Register, the Member or CNCP shall notify the flag State and provide an opportunity for the flag State to convey its position for the inclusion of its vessel on the Interim Registry.

16. The Commission shall, on a regular basis, monitor the IUU vessel lists maintained by RFMOs. At any time that a vessel on the Interim Register is also on one of those IUU vessel lists, the Secretariat shall:
    (a) notify the Commission member, Cooperating non-Contracting Parties and the owner of the vessel of its finding and that the vessel will be removed from the Interim Register, effective 30 days from the date of the notice; and
    (b) 30 days from the notice given under sub-paragraph (a), remove the vessel from the Register.

17. The Commission shall monitor the performance of the vessels on the Interim Register with respect to the written undertakings submitted under paragraph 10. If at any time a Commission member or Cooperating non-Contracting Party finds evidence that the owner, manager/operator or master of a vessel on the Register has failed to fully discharge those undertakings:
    (a) the Commission member or Cooperating non-Contracting Party shall immediately submit such evidence to the Secretariat;
    (b) the Secretariat will immediately circulate such evidence to the Commission members or Cooperating non-Contracting Parties;

(c) the Commission shall review the evidence and decide whether or not to remove the vessel from the Interim Register. If the Commission is to next meet between 14 and 60 days after the circulation made under paragraph 16(b), such decision shall be made in the next session of the Commission, otherwise it shall be made in accordance with the Commission Rules of Procedure as they relate to inter-sessional decision-making;

(d) if the Commission decides to remove a vessel from the Interim Register, the Secretariat will notify the owner of the vessel of the decision within 7 days and remove the vessel from the Register 60 days after the Commission's decision.

(e) The Executive Secretary shall advise all Commission members or Cooperating non–Contracting Parties and the flag State of the completion of action taken under paragraph 17 (d).

18. The Interim Register shall expire 60 days after the Annual Regular Session of the Commission in 2019 unless the Commission decides otherwise at its Commission Meeting in 2019. The TCC will conduct a review in 2018 and 2019 of the non-member flagged fleet including an assessment of potential economic impacts to NPFC target fisheries resources in the Convention Area and unforeseen circumstances that could arise through prohibition of non-members carriers.

General

19. Commission members and Cooperating non-Contracting Parties shall ensure they have maintained the NPFC Vessel Registry and the Interim Register of the vessels based on the information provided to it pursuant to the above paragraphs 1-17 and make the record publicly available as appropriate and subject to any legal confidentiality regulations of the individual Commission member and Cooperating non-Contracting Party.

20. Each Commission member and Cooperating non-Contracting Party entering vessels on the NPFC Vessel Registry or the Interim Register shall enter the required data for its vessels or vessels listed on the Interim Registry immediately after it has so authorized the vessel to conduct fishing activities and shall not authorize the vessel to conduct such fishing activities in the NPFC Convention Area until the vessel has been accepted by the database.

21. The Commission shall also provide to any member of the Commission or Cooperating non-Contracting Parties, upon request, information about any vessel entered on the Commission record that is not otherwise publicly available, as appropriate.

22. This CMM shall replace the NPFC CMM 2016-01.

ANNEX

Vessel Information Requirements

The following are the data information to be provided to the Commission for the vessel registry.

(a) Name of fishing vessel*;
(b) Previous name(s) of fishing vessel (where applicable);
(c) Registration number*;
(d) Previous registration number(s) (where applicable);
(e) Port of Registry;
(f) Previous port(s) of registry (where applicable);
(g) IMO number *;
To allow the necessary time for members of the Commission or Cooperating non- Contracting Parties to obtain an IMO number for eligible vessels that do not already have one, this point of this Annex on IMO number is effective as of 1 January 2020. As of this date, members of the Commission should, to the extent possible, ensure that all their fishing vessels that are registered on the NPFC Record of fishing vessels have IMO numbers issued to them. This point of this Annex on IMO number does not apply to vessels which are not eligible to receive IMO numbers.
(h) Name and address of owner or owners*;
(i) Name* and citizenship of master;
(j) Previous flag (if any);
(k) International Radio Call Sign (IRCS)* (where applicable);
(l) Maritime Mobile Service Identity (MMSI) (where applicable):
(m) Vessel communication types and numbers including, when available, any satellite-based telephony or data services/devices;
(n) Full length side views color photographs of the vessel showing full length of vessel and vessel name and markings*. Provision of additional photographs showing bow and stern view are encouraged;
(o) Where*(Country/Member) and when built (Year);
(p) Type of vessel*, as specified in standard abbreviations under the current FAO International Standard Statistical Classification of Fishery Vessels by Vessel Types
(ISSCFV);
(q) Normal crew complement;
(r) Type of fishing method or methods, as specified in standard abbreviations under the current FAO International Standard Statistical Classification of Fishing Gear (ISSCFG);
(s) Length*, including type of length* and unit of measurement*;
(t) Depth, including type of depth and unit of measurement;
(u) Beam*, including type of beam* and unit of measurement*;
(v) Gross register tonnage*, or gross tonnage* (specify which);
(w) Power of main engine or engines, including unit of measurement;
(x) The nature of the authorization to fish granted by the flag State, such as type or method of fisheries authorized and main target species and Authorized Periods*;
(y) Fish hold capacity, in cubic meters;
(z) Freezer type and capacity, including unit of measurement.

*Asterisk denotes initial data elements.
Initial data elements are required to start fishing activities.

NPFC IUU VESSEL LIST

19 August 2018

Commission Members adopted the attached NPFC IUU List at the Fourth Commission Meeting in July 2018.

No.	a. Name of vessel (previous names)	b. Flag of vessel (previous flags)	c. Owner (previous owners)	d. Operator of vessel (previous operators)	e. Call sign of vessel (previous call signs)	f. Lloyds/IMO number	h. Date first included on NPFC IUU List	i. Summary of activities
1	LIAO YUAN YU 071	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42˚15.4'N, 153˚22.8'E on 23 Aug 2016. When the Japanese patrol vessel approached, a vessel crew tried to hide the vessel name. Communication between the Japanese patrol vessel and LIAO YUAN YU 071 indicated that they hid the vessel name because they didn't want to be caught. (Port displayed on the vessel: Shidao; Vessel type; Lighted lift net vessel; Tonnage: 800t)

g. Photographs

2	LIAO YUAN YU 072	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42°18.7'N, 153°27.9'E on 23 Aug and at 42°9.2'N, 151°16.4'E on 11 Oct 2016. Vessel name was hidden by paint. (Port displayed on the vessel: Shidao; Vessel type; Lighted lift net vessel; Tonnage: 800t)
g. Photographs 								
3	LIAO YUAN YU 9	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42°3.0'N, 153°0.8'E on 23 Aug and at 42°10.0'N, 151°16.8'E on 11 Oct 2016. Vessel name was hidden by paint. (Port displayed on the vessel: Shidao; Vessel type; Lighted lift net vessel; Tonnage: 800t)
g. Photographs 								

4	ZHOU YU 651	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42˚30'2N, 152˚05'4E on 29 Sep 2016. (Port displayed on the vessel: Fungcheng; Vessel type; Lighted lift net vessel; Tonnage: 850t)

g. Photographs


5	ZHOU YU 652	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42˚48.9'N, 152˚48.2'E on 7 Sep 2016. Port of registry was hidden by paint. (Vessel type; Lighted lift net vessel; Tonnage: 820t) MMSI: 42569986

g. Photographs


6	ZHOU YU 653	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen with LU RONG YU YUN 56219 and ZHOU YU 656 at 42˚11.9'N, 151˚14.6'E on 30 Sep 2016. (Port displayed on the vessel: Fungcheng; Vessel type; Lighted lift net vessel; Tonnage: 850t) Communication between Japanese patrol vessel and LU RONG YU YUN 56219 indicated ZHOU YU 653 were transshipping 1500t of mackereltogether with ZHOU YU 656.

g. Photographs

7	ZHOU YU 656	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen with LU RONG YU YUN 56219 and ZHOU YU 656 at 42˚11.9'N, 151˚14.6'E on 30 Sep 2016. (Port displayed on the vessel: Fungcheng; Vessel type; Lighted lift net vessel; Tonnage: 850t) Note that the same vessel name with the different port of registry (Zhoushan) (600t) has been seen in the similar area. Communication between Japanese patrol vessel and LU RONG YU YUN 56219 indicated ZHOU YU 656 were transshipping 1500t of mackereltogether with ZHOU YU 653. MMSI: 100900240/412440242
g. Photographs (No Photographs Available)								

8	ZHOU YU 657	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42˚35.5'N, 152˚6.7'E on 12 Sep 2016. (Port displayed on the vessel: Zhoushan; Vessel type; Lighted lift net vessel; Tonnage: 600t)

g. Photographs

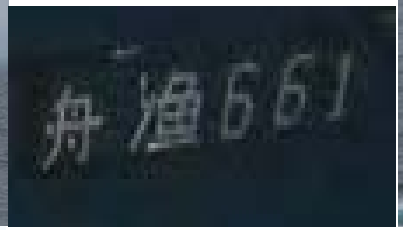
9	ZHOU YU 658	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 40˚12.3'N, 148˚40.5'E on 29 May 2016 and at 42˚46.7'N, 152˚41.2'E on 7 Sep 2016. (Port displayed onthe vessel: Zhoushan; Vesseltype; Lighted lift net vessel; Tonnage: 600t)

g. Photographs

10	ZHOU YU 659	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen in the NPFC area on 2, 4, 13, 17 Jun and 7 Sep 2016. On 4 Jun the vessel name on the right side was hidden by paint. (Port displayed on the vessel: Zhoushan; Vessel type: Lighted lift net vessel; Tonnage: 600t)
g. Photographs 								
11	ZHOU YU 660	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen in the Japanese EEZ on 10 May 2016 and in NPFC area multiple times from May to Sep 2016. On 10 May the vessel showed Korean flag but changed the Korean to Japanese flag when the Japanese patrol vessel approached. Vessel name changed between 15 May and 12 Sep 2016 (see the photos). The vessel is not permitted in Japan nor registered in NPFC. (Port displayed on the vessel: Basuo-not apparent; Vessel type: Lightedlift net vessel; Tonnage: 600t)
g. Photographs 								

12	ZHOU YU 661	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen in the Japanese EEZ on 10 and 13 May 2016 and in NPFC area on 15, 29 May and 7 Sep 2016. The vessel names on the left and right side changed frequently (see the photos). The vessel showed Japanese flag in May. But the vessel is not permitted in Japan nor registered in NPFC. (Port displayed on the vessel: Shidao; Vessel type: Lighted lift net vessel; Tonnage: 600t)

g. Photographs


13	HAI DA 705	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	Communications between Japanese Patrol vessel and HAI DA705 at 43˚10.4'N, 153˚38.6'E on 11 Sep 2016 indicated they caught squid with drift net in the high sea. (Port displayed on the vessel: 沈家们; Vessel type: Drift net vessel; Tonnage: 290t)
g. Photographs      								
14	LU RONG YU 1189	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 41˚24.9'N, 140˚32.7'E (Japan EEZ) on 14 Jun 2016. (Port displayed on the vessel: Shidao; Vessel type: Carrier vessel; Tonnage: 100t) MMSI: 412321992

g. Photographs

15	ZHE LING YU LENG 90055	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 40˚25.3'N, 149˚13.2'E on 29 May 2016. (Port displayed on the vessel: Wenling; Vessel type: Carrier vessel; Tonnage: 600t) MMSI: 412000000/413202046

g. Photographs

16	ZHE LING YU LENG 905	Unknown	Not known	Not known	Not known	Not known	29 Aug. 2017	It was seen at 42˚45.6'N, 152˚45.8'E on 24 Aug 2016. (Port displayed on the vessel: Wenling; Vessel type: Carrier vessel; Tonnage: 1000t) MMSI: 412000000/412000256

g. Photographs (No Photographs Available)

17	LU RONG YUAN YU 101	unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 101 is registered as a light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 101 with lift net type was seen at 49˚9.2'N, 149˚19.5'E on 17 May 2016. LU RONG YUAN YU 101 with stern-trawl type was seen at 38˚0.2'N, 145˚58.5'E on 20 May 2016. (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 800t/651t) MMSI: Lift Net 656558842/Stern Trawl 412328753

g. Photographs




18	LU RONG YUAN YU 102	unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 102 is registered as one light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 102 with lift net type was seen at 42° 21.3'N, 151° 55.5'E on 11 Oct 2016. LU RONG YUAN YU 102 with stern-trawl type was seen at 42°7.3'N, 151°13.8'E on the same day. LU RONG YUAN YU 102 was also seen with a carrier vessel "MIN FU DING YU LENG 08888" at 42°22.2'N, 151°19.6'E on 12 Oct 2016. (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 800t/651t) MMSI: Lift net 413228752/Stern Trawl 412328752
g. Photographs    								
19	LU RONG YUAN YU 103	unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 103 is registered as one light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 103 with lift net type was seen at 40°25.9'N, 150° 9.9'E on 1 June 2016. LU RONG YUAN YU 103 with stern-trawl type was seen at 37°59.9'N, 145°58.5'E on 20 May 2016. (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 651t/651t) MMSI: Lift Net 412328751/Stern Trawl 412328751

g. Photographs




20	LU RONG YUAN YU 105	unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 105 is registered as one light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 105 with lift net type was seen at 42°27'N, 152° 5.8'E on 11 Oct 2016.LU RONG YUAN YU 105 with stern-trawl type was seen at 41°54.8'N, 151°17.4'E on 5 Sep 2016. (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 651t/651t) MMSI: Lift net 926001560/412428757 Stern Trawl 412328749

g. Photographs


21	LU RONG YUAN YU 106	Unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 106 is registered as one light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 106 with lift net type was seen at 40˚30.4'N, 149˚ 34'E on 29 May 2016. LU RONG YUAN YU 106 with stern-trawl type was seen at 40˚17.6'N, 148˚33'E on the same day. The two fishing vessels with duplicate names “LU RONG YUAN YU 106” were seen transshipping with a carrier vessel “MIN FU DING YU LENG 08888” at 42˚16.4'N, 151˚21.4'E on 8 Oct 2016 (see the last photo). (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 651t/651t) MMSI: Lift net 412328748 Stern Trawl 412328748

g. Photographs

22	LU RONG YUAN YU 108	Unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 108 is registered as one light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 108 with lift net type was seen at 40˚28.4'N, 149˚28.1'E on 29 May 2016. LU RONG YUAN YU 108 with stern-trawl type was seen at 40˚18.6'N, 148˚30.7'E on the same day. (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 651t/651t) MMSI: Lift Net 412443265 412328746 800025754 Stern Trawl 800024754

g. Photographs

23	LU RONG YUAN YU 109	Unknown	Not known	Not known	Not known	Not known	13 Nov. 2017	While LU RONG YUAN YU 109 is registered as one light PS vessel in the NPFC list, the identical name with different vessel types were seen. LU RONG YUAN YU 109 with lift net type was seen at 40˚25.1'N, 149˚ 25 'E on 29 May 2016. LU RONG YUAN YU 109 with stern-trawl type was seen at 40˚16.4'N, 148˚32.1'E on the same day. (Port displayed on the vessel: Shidao; Vessel type: Stern Trawl/Light lift net vessel; Tonnage: 651t/651t) MMSI: Lift Net 412328745 Stern Trawl 412328745/800025747

g. Photographs



The binding decision on Vessels No. 24 to 27 becomes effective on 17 November 2018

24.	LU RONG●YU 612	Unknown	Not known	Not known	Not known	Not known	19 Aug 2018	A Japanese patrol vessel sighted this fishing vessel was drifting in the Convention area at 39˚50.00'N, 147˚1.8'E on July 21. The port of registry is Shidao and AIS information showed that the vessel name is "Lu Long Yuan Yu 108", which is on the current IUU vessel list and is different from the name shown on the vessel side, and that MMSI is 412328746. The tonnage 651 t was derived from the information of "Lu Long Yuan Yu 108" in the current IUU vessel list. Ref: NPFC-2018-TCC03-WP04

25.	LU RONG YUAN YU 787	Unknown	Not known	Not known	Not known	Not known	19 Aug 2018	A Japanese patrol vessel sighted this fishing vessel was drifting in the Convention area at 39°49.7'N, 147°2.8'E on July 21 2017, and Japanese patrol aircraft sighted the same vessel anchored at 41°3.3'N, 150°22.1'E on August 2 2017. The China flag was raised and the sign of "CHINA" was painted on the vessel side (see the photos). MMSI is 413800814 and the port of registry is Shidao. Ref: NPFC-2018-TCC03-WP04

26.	LU RONG YUAN YU YUN 958	Unknown	Not known	Not known	Not known	Not known	19 Aug 2018	A Japanese patrol fishing vessel sighted this fishing vessel was drifting in the Convention area at 39˚50.9'N, 147˚4.3'E on July 21. The vessel raised China flag and the port of registry was Shidao. AIS information showed that the vessel name is 958 and MMSI is 412452812. Ref: NPFC-2018-TCC03-WP04

27.	LU RONG YUAN YU 797	Unknown	Not known	Not known	Not known	Not known	19 Aug 2018	A Japanese patrol aircraft sighted this fishing vessel in the Convention area was operating at 42°7.1'N, 151°40.9'E on July 7 2017. China flag was raised and "CHINA" was painted on the vessel side (see the photo). MMSI is 412327980. Ref: NPFC-2018-TCC03-WP04

Annex

CMM 2018-05

CONSERVATION AND MANAGEMENT MEASURE FOR BOTTOM FISHERIES AND PROTECTION OF VULNERABLE MARINE ECOSYSTEMS IN THE NORTHWESTERN PACIFIC OCEAN

The North Pacific Fisheries Commission (NPFC),

Strongly supporting protection of vulnerable marine ecosystems (VMEs) and sustainable management of fish stocks based on the best scientific information available;

Recalling the United Nations General Assembly Resolutions (UNGA) on Sustainable Fisheries, particularly paragraphs 66 to 71 of the UNGA59/25 in 2004, paragraphs 69 to 74 of UNGA60/31 in 2005, and paragraphs 69 and 80 to 91 of UNGA61/105 in 2006;

Noting, in particular, paragraphs 66 and 69 of UNGA59/25 that call upon States to take action urgently to address the issue of bottom trawl fisheries on VMEs and to cooperate in the establishment of new regional fisheries management organizations or arrangements;

Recognizing further that fishing activities, including bottom fisheries, are an important contributor to the global food supply and that this must be taken into account when seeking to achieve sustainable fisheries and to protect VMEs;

Recognizing the importance of collecting scientific data to assess the impacts of these fisheries on marine species and VMEs;

Concerned about possible adverse impacts of unregulated expansion of bottom fisheries on marine species and VMEs in the western part of the Convention Area.

Adopts the following Conservation and Management Measure:

1. Scope

A. Coverage

These Measures are to be applied to all bottom fishing activities throughout the high seas areas of the Northwestern Pacific Ocean, defined, for the purposes of this document, as those occurring in the Convention Area as set out in Article 4 of the Convention text to the west of the line of 175 degrees W longitude (here in after called “the western part of the Convention Area”) including all such areas and marine species other than those species already covered by existing international fisheries management instruments, including bilateral agreements and Regional Fisheries Management Organizations or Arrangements.

B. Management target

Bottom fisheries conducted by vessels operating in the western part of the Convention Area.

2. General purpose

Sustainable management of fish stocks and protection of VMEs in the western part of the Convention Area.

The objective of these Measures 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. These measures shall set out to prevent significant adverse impacts on VMEs in the Convention Area of the North Pacific Ocean, acknowledging the complex dependency of fishing resources and species belonging to the same ecosystem within VMEs.

The Commission shall re-evaluate, and as appropriate, revise, the definition based on further consideration of the work done through FAO and by NPFC.

3. Principles

The implementation of this CMM shall:

(a) be based on the best scientific information available,
(b) be in accordance with existing international laws and agreements including UNCLOS and other relevant international instruments,
(c) establish appropriate and effective conservation and management measures,
(d) be in accordance with the precautionary approach, and
(e) incorporate an ecosystem approach to fisheries management.

4. Measures

Members of the Commission shall take the following measures in order to achieve sustainable management of fish stocks and protection of VMEs in the western part of the Convention Area:

A. Limit fishing effort in bottom fisheries on the western part of the Convention Area to the level agreed in February 2007 in terms of the number of fishing vessels and other parameters which reflect the level of fishing effort, fishing capacity or potential impacts on marine ecosystems.

B. Not allow bottom fisheries to expand into the western part of the Convention Area where no such fishing is currently occurring, in particular, by limiting such bottom fisheries to seamounts located south of 45 degrees North Latitude and refrain from bottom fisheries in other areas of the western part of the Convention Area covered by these measures and also not allow bottom fisheries to conduct fishing operation in areas deeper than 1,500m.

C. Notwithstanding subparagraphs A and B above, exceptions to these restrictions may be provided in cases where it can be shown that any fishing activity beyond such limits or in any new areas would not have significant adverse impacts (SAIs) on marine species or any VME. Such fishing activity is subject to an exploratory fishery protocol (Annex 1).

D. Any determinations pursuant to subparagraph C that any proposed fishing activity will not have SAIs on marine species or any VME are to be in accordance with the Science-based Standards and Criteria (Annex 2), which are consistent with the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas.

E. Any determinations, by any flag state or pursuant to any subsequent arrangement for the management of the bottom fisheries in the areas covered by these measures, that fishing activity would not have SAIs on marine species or any VMEs, shall be made publicly available through agreed means.

F. Prohibit its vessels from engaging in directed fishing on the following taxa: *Alcyonacea, Antipatharia, Gorgonacea,* and *Scleractinia* as well as any other indicator species for VMEs as may be identified from time to time by the SC and approved by the Commission.

G. Further, considering accumulated information regarding fishing activities in the western part of the Convention Area, in areas where, in the course of fishing operations, cold water corals more than 50Kg are encountered in one gear retrieval, Members of the Commission shall require vessels flying their flag to cease bottom fishing activities in that location. In such cases, the vessel shall not resume fishing activities until it has relocated a sufficient distance, which shall be no less than 2 nautical miles, so that additional encounters with VMEs are unlikely. All such encounters, including the location and the species in question, shall be reported to the Secretariat, who shall notify the other Members of the Commission so that appropriate measures can be adopted in respect of the relevant site. It is agreed that the cold water corals include: *Alcyonacea, Antipatharia, Gorgonacea*, and *Scleractinia*.

H. C-H seamount and Southeastern part of Koko seamount, specifically for the latter seamount, the area South of 34 degrees 57 minutes North, East of the 400m isobaths, East of 171 degrees 54 minutes East, North of 34 degrees 50 minutes North, are closed precautionary for potential VME conservation. Fishing in these areas requires exploratory fishery protocol (Annex 1).

I. Ensure that the distance between the footrope of the gill net and sea floor is greater than 70 cm.

J. Apply a bottom fisheries closure from November to December

K. Limit annual catch of North Pacific armorhead to 15,000 tons for Japan

L. Development of new fishing activity for the North Pacific armorhead and splendid alfonsino in the Convention Area by Members without documented historical catch for North Pacific armorhead and splendid alfonsino in the Convention Area shall be determined in accordance with relevant provisions, including but not limited to Article 3, paragraph (h) and Article 7, subparagraphs 1(g) and (h) of the Convention.

M. In years when strong recruitment of North Pacific armorhead is not detected (Annex 6-1), the Commission encourages Japan to limit the annual catch of North Pacific armorhead by vessels flying its flag to 500 tons, and encourages Korea to limit the annual catch of North Pacific armorhead by vessels flying its flag to 200 tons. The Commission encourages that catch overages for any given year be subtracted from the applicable annual catch limit in the following year, and that catch under ages during any given year not be added to the applicable annual catch limit during the following year.

N. Notwithstanding subparagraph K, when a strong recruitment of North Pacific armorhead is detected through the monitoring surveys as specified in Annex 6-1, the Commission encourages that Japan limit the annual catch of North Pacific armorhead by vessels flying its flag to 10,000 tons, and that Korea limit the annual catch of North Pacific armorhead by vessels flying its flag to 2,000

tons. The Commission encourages that catch overages for any given year be subtracted from the applicable annual catch limit in the following year, and that catch under ages during any given year not be added to the applicable annual catch limit during the following year. During a year when high recruitment is detected, bottom fishing with trawl gear shall be prohibited in specific areas in the Emperor seamounts where half of the catch occurred in 2010 and 2012. Determination of a strong recruitment year and of the specific areas where bottom fishing with trawl gear is prohibited shall be communicated to all Members and Cooperating Non-Contracting parties following the procedure specified in Annex 6-2.

O. Fishing activity for the North Pacific armorhead and splendid alfonsino in the Convention Area by Members with documented historical catch for North Pacific armorhead and splendid alfonsino in the Convention Area is not precluded.

P. Members shall require vessels flying their flags to use trawl nets with mesh size greater than or equal to 130mm of stretched mesh with 5kg tension in the codend when conducting fishing activities for North Pacific armorhead or splendid alfonsino.

Q. Task the Scientific Committee with reviewing the appropriate methods for establishing catch limits, and the adequacy and practicability of the adaptive management plan described in subparagraphs K, L, M, N, O, P and Annexes 6-1 and 6-2 from time to time and recommending revisions and actions, if necessary.

5. Contingent Action

Members of the Commission shall submit to the SC their assessments of the impacts of fishing activity on marine species or any VMEs, including the proposed management measures to prevent such impact. Such submissions shall include all relevant data and information in support of any such assessment. Procedures for such reviews including procedures for the provision of advice and recommendations from the SC to the submitting Member are attached (Annex 3). Members will only authorize bottom fishing activity pursuant to para 4 (C).

6. Scientific Information

To facilitate the scientific work associated with the implementation of these measures, each Member of the Commission shall undertake:

A. Collection of information for purposes of defining the footprint
In implementing paragraphs 4A and 4B, the Members of the Commission shall provide for each year, the number of vessels by gear type, size of vessels (tons), number of fishing days or days on the fishing grounds, total catch by species, and areas fished (names of seamounts) to the Secretariat. The Secretariat shall circulate the information received to the other Members consistent with the approved Interim Data Handling and Data Sharing Protocol. To support assessments of the fisheries and refinement of conservation and management measures, Members of the Commission are to provide update information on an annual basis.

B. Collection of information

(i) Collection of scientific information from each bottom fishing vessel operating in the western part of the Convention Area.
    (a) Catch and effort data
    (b) Related information such as time, location, depth, temperature, etc.

(ii) As appropriate the collection of information from research vessels operating in the western part of the Convention Area.
    (a) Physical, chemical, biological, oceanographic, meteorological, etc.
    (b) Ecosystem surveys.

(iii) Collection of observer data

Duly designated observers from the flag member shall collect information from bottom fishing vessels operating in the western part of the Convention Area. Observers shall collect data in accordance with Annex 5. Each Member of the Commission shall submit the reports to the Secretariat in accordance with Annex 4. The Secretariat shall compile this information on an annual basis and make it available to the Members of the Commission.

7. Control of bottom fishing vessels

To strengthen its control over bottom fishing vessels flying its flag, each Member of the Commission shall ensure that all such vessels operating in the western part of the Convention Area be equipped with an operational vessel monitoring system.

8. Observers

All vessels authorized to bottom fishing in the western part of the Convention Area shall carry an observer on board.

Annex 1

EXPLORATORY FISHERY PROTOCOL IN THE NORTH PACIFIC OCEAN

1. From 1 January 2009, all bottom fishing activities in new fishing areas and areas where fishing is prohibited in a precautionary manner or with bottom gear not previously used in the existing fishing areas, are to be considered as "exploratory fisheries" and to be conducted in accordance with this protocol.

2. Precautionary conservation and management measures, including catch and effort controls, are essential during the exploratory phase of deep sea fisheries. Implementation of a precautionary approach to sustainable exploitation of deep sea fisheries shall include the following measures:

   (i) precautionary effort limits, particularly where reliable assessments of sustainable exploitation rates of target and main by-catch species are not available;

   (ii) precautionary measures, including precautionary spatial catch limits where appropriate, to prevent serial depletion of low-productivity stocks;

   (iii) regular review of appropriate indices of stock status and revision downwards of the limits listed above when significant declines are detected;

   (iv) measures to prevent significant adverse impacts on vulnerable marine ecosystems; and

   (v) comprehensive monitoring of all fishing effort, capture of all species and interactions with VMEs.

3. When a member of the Commission would like to conduct exploratory fisheries, it is to follow the following procedure:

   (i) Prior to the commencement of fishing, the member of the Commission is to circulate the information and assessment in Appendix 1.1 to the members of the Scientific Committee (SC) for review and to all members of the Commission for information, together with the impact assessment. Such information is to be provided to the other members at least 30 days in advance of the meeting at which the information shall be reviewed.

   (ii) The assessment in (i) above is to be conducted in accordance with the procedure set forth in "Science-based Standards and Criteria for Identification of VMEs and Assessment of Significant Adverse Impacts on VMEs and Marine Species (Annex 2)", with the understanding that particular care shall be taken in the evaluation of risks of the significant adverse impact on vulnerable marine ecosystems (VMEs), in line with the precautionary approach.

   (iii) The SC is to review the information and the assessment submitted in (i) above in accordance with "SC Assessment Review Procedures for Bottom Fishing Activities (Annex 3)."

   (iv) The exploratory fisheries are to be permitted only where the assessment concludes that they would not have significant adverse impacts (SAIs) on marine species or any VMEs and on the basis of comments and recommendations of SC. Any determinations, by any Member of the Commission or the SC, that the

exploratory fishing activities would not have SAIs on marine species or any VMEs, shall be made publicly available through the NPFC website.

4. The member of the Commission is to ensure that all vessels flying its flag conducting exploratory fisheries are equipped with a satellite monitoring device and have an observer on board at all times.

5. Within 3 months of the end of the exploratory fishing activities or within 12 months of the commencement of fishing, whichever occurs first, the member of the Commission is to provide a report of the results of such activities to the members of the SC and all members of the Commission. If the SC meets prior to the end of this 12-month period, the member of the Commission is to provide an interim report 30 days in advance of the SC meeting. The information to be included in the report is specified in Appendix 1.2.

6. The SC is to review the report in 5 above and decide whether the exploratory fishing activities had SAIs on marine species or any VME. The SC then is to send its recommendations to the Commission on whether the exploratory fisheries can continue and whether additional management measures shall be required if they are to continue. The Commission is to strive to adopt conservation and management measures to prevent SAIs on marine species or any VMEs. If the Commission is not able to reach consensus on any such measures, each fishing member of the Commission is to adopt measures to avoid any SAIs on VMEs.

7. Members of the Commission shall only authorize continuation of exploratory fishing activity, or commencement of commercial fishing activity, under this protocol on the basis of comments and recommendations of the SC.

Appendix 1.1

Information to be provided before exploratory fisheries start

1. A harvesting plan
   - Name of vessel
   - Flag member of vessel
   - Description of area to be fished (location and depth)
   - Fishing dates
   - Anticipated effort
   - Target species
   - Bottom fishing gear-type used
   - Area and effort restrictions to ensure that fisheries occur on a gradual basis in a limited geographical area.

2. A mitigation plan
   - Measures to prevent SAIs to VMEs that may be encountered during the fishery

3. A catch monitoring plan
   - Recording/reporting of all species brought onboard to the lowest possible taxonomic level
   - 100% satellite monitoring
   - 100% observer coverage

4. A data collection plan
- Data is to be collected in accordance with "Type and Format of Scientific Observer Data to be Collected" (Annex 5)

Appendix 1.2

Information to be included in the report

- Name of vessel
- Flag member of vessel
- Description of area fished (location and depth)
- Fishing dates
- Total effort
- Bottom fishing gear-type used
- List of VME encountered (the amount of VME indicator species for each encounter specifying the location: longitude and latitude)
- Mitigation measures taken in response to the encounter of VME
- List of all organisms brought onboard
- List of VMEs indicator species brought onboard by location: longitude and latitude

Annex 2

SCIENCE-BASED STANDARDS AND CRITERIA FOR IDENTIFICATION OF VMES AND ASSESSMENT OF SIGNIFICANT ADVERSE IMPACTS ON VMES AND MARINE SPECIES

1. Introduction

Members of the Commission have hereby established science-based standards and criteria to guide their implementation of United Nations General Assembly (UNGA) Resolution 61/105 and the measures adopted by the Members in respect of bottom fishing activities in the North Pacific Ocean (NPO). In this regard, these science-based standards and criteria are to be applied to identify vulnerable marine ecosystems (VMEs) and assess significant adverse impacts (SAIs) of bottom fishing activities on such VMEs or marine species and to promote the long-term sustainability of deep sea fisheries in the Convention Area. The science-based standards and criteria are consistent with the FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas, taking into account the work of other RFMOs implementing management of deep-sea bottom fisheries in accordance with UNGA Resolution 61/105. The standards and criteria are to be modified from time to time as more data are collected through research activities and monitoring of fishing operations.

2. Purpose

(1) The purpose of the standards and criteria is to provide guidelines for each member of the Commission in identifying VMEs and assessing SAIs of individual bottom fishing activities[3] on VMEs or marine species in the Convention Area. Each member of the Commission, using the best information available, is to decide which species or areas are to be categorized as VMEs, identify areas where VMEs are known or likely to occur, and assess whether individual bottom fishing activities would have SAIs on such VMEs or marine species. The results of these tasks are to be submitted to and reviewed by the Scientific Committee with a view to reaching a common understanding among the members of the Commission.

(2) For the purpose of applying the standards and criteria, the bottom fisheries are defined as follows:
   (a) The fisheries are conducted in the Convention Area;
   (b) The total catch (everything brought up by the fishing gear) includes species that can only sustain low exploitation rates; and
   (c) The fishing gear is likely to contact the seafloor during the normal course of fishing operations

3. Definition of VMEs

(1) Although Paragraph 83 of UNGA Resolution 61/105 refers to seamounts, hydrothermal vents and cold-water corals as examples of VMEs, there is no definitive list of specific species or areas that are to be regarded as VMEs.

(2) Vulnerability is related to the likelihood that a population, community or habitat will experience substantial alteration by fishing activities and how much time will be required for its recovery from such alteration. The most vulnerable ecosystems are those that are both easily disturbed and are very slow to recover, or may never recover. The vulnerabilities of populations, communities and habitats are to be assessed relative to specific threats. Some features, particularly ones that are physically fragile or inherently rare may be vulnerable to most forms of disturbance, but the vulnerability of some populations, communities and habitats may vary greatly depending on the type of fishing gear used or the kind of disturbance experienced. The risks to a marine ecosystem are determined by its vulnerability, the probability of a threat occurring and the mitigation means applied to the threat. Accordingly, the FAO Guidelines only provide examples of potential vulnerable species groups, communities and habitats as well as features that potentially support them (Annex 2.1).

[3] "individual bottom fishing activities" means fishing activities by each fishing gear. For example, if ten fishing vessels operate bottom trawl fishing in a certain area, the impacts of the fishing activities of these vessels on the ecosystem are to be assessed as a whole rather than on a vessel-by-vessel basis. It should be noted that if the total number or capacity of the vessels using the same fishing gear has increased, the impacts of the fishing activities are to be assessed again.

(3) A marine ecosystem is to be classified as vulnerable based on its characteristics. The following list of characteristics is used as criteria in the identification of VMEs.

(a) Uniqueness or rarity - an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by other similar areas. These include:
  (i) Habitats that contain endemic species;
  (ii) Habitats of rare, threatened or endangered species that occur in discrete areas;
  (iii) Nurseries or discrete feeding, breeding, or spawning areas

(b) Functional significance of the habitat – discrete areas or habitats that are necessary for the survival, function, spawning/reproduction or recovery of fish stocks, particular life-history stages (e.g. nursery grounds or rearing areas), or of rare, threatened or endangered marine species.

(c) Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities

(d) Life-history traits of component species that make recovery difficult – ecosystems that are characterized by populations or assemblages of species with one or more of the following characteristics:
  (i) Slow growth rates
  (ii) Late age of maturity
  (iii) Low or unpredictable recruitment
  (iv) Long-lived

(e) Structural complexity – an ecosystem that is characterized by complex physical structures created by significant concentrations of biotic and abiotic features. In these ecosystems, ecological processes are usually highly dependent on these structured systems. Further, such ecosystems often have high diversity, which is dependent on the structuring organisms.

(4) Management response may vary, depending on the size of the ecological unit in the Convention Area. Therefore, the spatial extent of the ecological unit is to be decided first. That is, whether the ecological unit is the entire Area, or the current fishing ground, namely, the Emperor Seamount and Northern Hawaiian Ridge area (hereinafter called "the ES-NHR area"), or a group of the seamounts within the ES-NHR area, or each seamount in the ES-NHR area, is to be decided using the above criteria.

4. Identification of potential VMEs

(1) Fished seamounts

(a) Identification of fished seamounts

It is reported that four types of fishing gear are currently used by the members of the Commission in the ES-NHR area, namely, bottom trawl, bottom gillnet, bottom longline and pot. A fifth type of fishing gear (coral drag) was used in the ES-NHR area from the mid-1960s to the late 1980s and is possibly still used by non-members of the Commission. These types of fishing gear are usually used on the top or slope of seamounts, which could be considered VMEs. It is therefore necessary to identify the footprint of the bottom fisheries (fished seamounts) based on the available fishing record. The following seamounts have been identified as fished seamounts: Suiko, Showa, Youmei, Nintoku, Jingu, Ojin, Northern Koko, Koko, Kinmei, Yuryaku, Kammu, Colahan, and C-H. Since the use of most of these gears in the ES-NHR area dates back to the late 1960s and 1970s, it is important to establish, to the extent practicable, a time series of where and when these gears have been used in order to assess potential long-term effects on any existing VMEs.

Fishing effort may not be evenly distributed on each seamount since fish aggregation may occur only at certain points of the seamount and some parts of the seamount may be physically unsuitable for certain fishing gears. Thus, it is important to know actual fished areas within the same seamount so as to know the gravity of the impact of fishing activities on the entire seamount.

Due consideration is to be given to the protection of commercial confidentiality when identifying actual fishing grounds.

(b) Assessment on whether a specific seamount that has been fished is a VME

After identifying the fished seamounts or fished areas of seamounts, it is necessary to assess whether each fished seamount is a VME or contains VMEs in accordance with the criteria in 3 above, individually or in combination using the best available scientific and technical information as well as Annex 2.1. A variety of data would be required to conduct such assessment, including pictures of seamounts taken by an ROV camera or drop camera, biological samples collected through research

activities and observer programs, and detailed bathymetry map. Where site-specific information is lacking, other information that is relevant to inferring the likely presence of VMEs is to be used.

(2) New fishing areas
Any place other than the fished seamounts above is to be regarded as a new fishing area. If a member of the Commission is considering fishing in a new fishing area, such a fishing area is to be subject to, in addition to these standards and criteria, an exploratory fishery protocol (Annex 1).

5. Assessment of SAIs on VMEs or marine species

(1) Significant adverse impacts are those that compromise ecosystem integrity (i.e., ecosystem structure or function) in a manner that: (i) impairs the ability of affected populations to replace themselves; (ii) degrades the long-term natural productivity of habitats; or (iii) causes, on more than a temporary basis, significant loss of species richness, habitat or community types. Impacts are to be evaluated individually, in combination and cumulatively.

(2) When determining the scale and significance of an impact, the following six factors are to be considered:
(a) The intensity or severity of the impact at the specific site being affected;
(b) The spatial extent of the impact relative to the availability of the habitat type affected;
(c) The sensitivity/vulnerability of the ecosystem to the impact;
(d) The ability of an ecosystem to recover from harm, and the rate of such recovery;
(e) The extent to which ecosystem functions may be altered by the impact; and
(f) The timing and duration of the impact relative to the period in which a species needs the habitat during one or more life-history stages.

(3) Temporary impacts are those that are limited in duration and that allow the particular ecosystem to recover over an acceptable timeframe. Such timeframes are to be decided on a case-by-case basis and be on the order of 5-20 years, taking into account the specific features of the populations and ecosystems.

(4) In determining whether an impact is temporary, both the duration and the frequency with which an impact is repeated is to be considered. If the interval between the expected disturbances of a habitat is shorter than the recovery time, the impact is to be considered more than temporary.

(5) Each member of the Commission is to conduct assessments to establish if bottom fishing activities are likely to produce SAIs in a given seamount or other VMEs. Such an impact assessment is to address, *inter alia*:
(a) Type of fishing conducted or contemplated, including vessel and gear types, fishing areas, target and potential bycatch species, fishing effort levels and duration of fishing;
(b) Best available scientific and technical information on the current state of fishery resources, and baseline information on the ecosystems, habitats and communities in the fishing area, against which future changes are to be compared;
(c) Identification, description and mapping of VMEs known or likely to occur in the fishing area;
(d) The data and methods used to identify, describe and assess the impacts of the activity, identification of gaps in knowledge, and an evaluation of uncertainties in the information presented in the assessment;
(e) Identification, description and evaluation of the occurrence, scale and duration of likely impacts, including cumulative impacts of activities covered by the assessment on VMEs and low-productivity fishery resources in the fishing area;
(f) Risk assessment of likely impacts by the fishing operations to determine which impacts are likely to be SAIs, particularly impacts on VMEs and low-productivity fishery resources (Risk assessments are to take into account, as appropriate, differing conditions prevailing in areas where fisheries are well established and in areas where fisheries have not taken place or only occur occasionally);
(g) The proposed mitigation and management measures to be used to prevent SAIs on VMEs and ensure long-term conservation and sustainable utilization of low-productivity fishery resources, and the measures to be used to monitor effects of the fishing operations.

(6) Impact assessments are to consider, as appropriate, the information referred to in these Standards and Criteria, as well as relevant information from similar or related fisheries, species and ecosystems.

(7) Where an assessment concludes that the area does not contain VMEs or that significant adverse impacts on VMEs or marine species are not likely, such assessments are to be repeated when there have been

significant changes to the fishery or other activities in the area, or when natural processes are thought to have undergone significant changes.

6. Proposed conservation and management measures to prevent SAIs

As a result of the assessment in 5 above, if it is considered that individual fishing activities are causing or likely to cause SAIs on VMEs or marine species, the member of the Commission is to adopt appropriate conservation and management measures to prevent such SAIs. The member of the Commission is to clearly indicate how such impacts are expected to be prevented or mitigated by the measures.

7. Precautionary approach

If after assessing all available scientific and technical information, the presence of VMEs or the likelihood that individual bottom fishing activities would cause SAIs on VMEs or marine species cannot be adequately determined, members of the Commission are only to authorize individual bottom fishing activities to proceed in accordance with:

(a) Precautionary, conservation and management measures to prevent SAIs;
(b) Measures to address unexpected encounters with VMEs in the course of fishing operations;
(c) Measures, including ongoing scientific research, monitoring and data collection, to reduce the uncertainty; and
(d) Measures to ensure long-term sustainability of deep sea fisheries.

8. Template for assessment report

Annex 2.2 is a template for individual member of the Commission to formulate reports on identification of VMEs and impact assessment.

ANNEX 2.1

EXAMPLES OF POTENTIAL VULNERABLE SPECIES GROUPS, COMMUNITIES AND HABITATS AS WELL AS FEATURES THAT POTENTIALLY SUPPORT THEM

The following examples of species groups, communities, habitats and features often display characteristics consistent with possible VMEs. Merely detecting the presence of an element itself is not sufficient to identify a VME. That identification is to be made on a case-by-case basis through application of relevant provisions of the Standards and Criteria, particularly Sections 3, 4 and 5.

Examples of species groups, communities and habitat forming species that are documented or considered sensitive and potentially vulnerable to deep-sea fisheries in the high-seas, and which may contribute to forming VMEs:	
a.	certain coldwater corals, e.g., reef builders and coral forest including: stony corals (scleractinia), alcyonaceans and gorgonians (octocorallia), black corals (antipatharia), and hydrocorals (stylasteridae),
b.	Some types of sponge dominated communities,
c.	communities composed of dense emergent fauna where large sessile protozoans (xenophyophores) and invertebrates (e.g., hydroids and bryozoans) form an important structural component of habitat, and
d.	seep and vent communities comprised of invertebrate and microbial species found nowhere else (i.e., endemic).

Examples of topographical, hydrophysical or geological features, including fragile geological structures, that potentially support the species groups or communities referred to above:	
a.	Submerged edges and slopes (e.g., corals and sponges)
b.	Summits and flanks or seamounts, guyots, banks, knolls, and hills (e.g. corals, sponges and xenophyphores
c.	canyons and trenches (e.g., burrowed clay outcrops, corals),
d.	hydrothermal vents (e.g., microbial communities and endemic invertebrates), and
e.	cold seeps (e.g., mud volcanoes, microbes, hard substrates for sessile invertebrates).

ANNEX 2.2

TEMPLATE FOR REPORTS ON IDENTIFICATION OF VMEs AND ASSESSMENT OF IMPACTS CAUSED BY INDIVIDUAL FISHING ACTIVITIES ON VMEs OR MARINE SPECIES

1. Name of the member of the Commission
2. Name of the fishery (e.g., bottom trawl, bottom gillnet, bottom longline, pot)
3. Status of the fishery (existing fishery or exploratory fishery)
4. Target species
5. Bycatch species
6. Recent level of fishing effort (every year at least since 2002)
   (1) Number of fishing vessels
   (2) Tonnage of each fishing vessel
   (3) Number of fishing days or days on the fishing ground
   (4) Fishing effort (total operating hours for trawl, # of hooks per day for long-line, # of pots per day for pot, total length of net per day for gillnet)
   (5) Total catch by species
   (6) Names of seamounts fished or to be fished
7. Fishing period
8. Analysis of status of fishery resources
   (1) Data and methods used for analysis
   (2) Results of analysis
   (3) Identification of uncertainties in data and methods, and measures to overcome such uncertainties
9. Analysis of status of bycatch species resources
   (1) Data and methods used for analysis
   (2) Results of analysis
   (3) Identification of uncertainties in data and methods, and measures to overcome such uncertainties
10. Analysis of existence of VMEs in the fishing ground
   (1) Data and methods used for analysis
   (2) Results of analysis
   (3) Identification of uncertainties in data and methods, and measures to overcome such uncertainties
11. Impact assessment of fishing activities on VMEs or marine species including cumulative impacts, and identification of SAIs on VMEs or marine species, as detailed in Section 5 above, Assessment of SAIs on VMEs or marine species
12. Other points to be addressed
13. Conclusion (whether to continue or start fishing with what measures, or stop fishing)

Annex 3

SCIENTIFIC COMMITTEE ASSESSMENT REVIEW PROCEDURES FOR BOTTOM FISHING ACTIVITIES

1. The Scientific Committee (SC) is to review identifications of vulnerable marine ecosystems (VMEs) and assessments of significant adverse impact on VMEs, including proposed management measures intended to prevent such impacts submitted by individual Members.

2. Members of the Commission shall submit their identifications and assessments to members of the SC at least 21 days prior to the SC meeting at which the review is to take place. Such submissions shall include all relevant data and information in support of such determinations.

3. The SC will review the data and information in each assessment in accordance with the Science-based Standards and Criteria for Identification of VMEs and Assessment of Significant Adverse Impacts on VMEs and Marine Species (Annex 2), previous decisions of the Commission, and the FAO Technical Guidelines for the Management of Deep Sea Fisheries in the High Seas, paying special attention to the assessment process and criteria specified in paragraphs 47-49 of the Guidelines.

4. In conducting the review above, the SC will give particular attention to whether the deep-sea bottom fishing activity would have a significant adverse impact on VMEs and marine species and, if so, whether the proposed management measures would prevent such impacts.

5. Based on the above review, the SC will provide advice and recommendations to the submitting Members on the extent to which the assessments and related determinations are consistent with the procedures and criteria established in the documents identified above; and whether additional management measures will be required to prevent SAIs on VMEs.

6. Such recommendations will be reflected in the report of the SC meeting at which the assessments are considered.

Annex 4

FORMAT OF NATIONAL REPORT SECTIONS ON DEVELOPMENT AND IMPLEMENTATION OF SCIENTIFIC OBSERVER PROGRAMMES

Report Components

Annual Observer Programme implementation reports should form a component of annual National Reports submitted by members to the Scientific Committee. These reports should provide a brief overview of observer programmes conducted in the NPFC Convention Area. Observer programme reports should include the following sections:

A. Observer Training

An overview of observer training conducted, including:

- Overview of training programme provided to scientific observers.
- Number of observers trained.

B. Scientific Observer Programme Design and Coverage

Details of the design of the observer programme, including:

- Which fleets, fleet components or fishery components were covered by the programme.
- How vessels were selected to carry observers within the above fleets or components.
- How was observer coverage stratified: by fleets, fisheries components, vessel types, vessel sizes, vessel ages, fishing areas and seasons.

Details of observer coverage of the above fleets, including:

- Components, areas, seasons and proportion of total catches of target species, specifying units used to determine coverage.
- Total number of observer employment days, and number of actual days deployed on observation work.

C. Observer Data Collected

List of observer data collected against the agreed range of data set out in Annex 5, including:

- Effort Data: Amount of effort observed (vessel days, net panels, hooks, etc), by area and season and % observed out of total by area and seasons
- Catch Data: Amount of catch observed of target and by-catch species, by area and season, and % observed out of total estimated catch by species, area and seasons
- Length Frequency Data: Number of fish measured per species, by area and season.
- Biological Data: Type and quantity of other biological data or samples (otoliths, sex, maturity, etc.) collected per species.
- The size of length-frequency and biological sub-samples relative to unobserved quantities.

D. Tag Return Monitoring

- Number of tags returns observed, by fish size class and area.

E. Problems Experienced

- Summary of problems encountered by observers and observer managers that could affect the NPFC Observer Programme Standards and/or each member's national observer programme developed under the NPFC standards.

Annex 5

NPFC BOTTOM FISHERIES
OBSERVER PROGRAMME STANDARDS: SCIENTIFIC COMPONENT

TYPE AND FORMAT OF SCIENTIFIC OBSERVER DATA TO BE COLLECTED

A. Vessel & Observer Data to be collected for Each Trip

1. Vessel and observer details are to be recorded only once for each observed trip.

2. The following vessel data are to be collected for each observed trip:
   (a) Current vessel flag.
   (b) Name of vessel.
   (c) Name of the Captain.
   (d) Name of the Fishing Master.
   (e) Registration number.
   (f) International radio call sign (if any).
   (g) Lloyd's / IMO number (if allocated).
   (h) Previous Names (if known).
   (i) Port of registry.
   (j) Previous flag (if any).
   (k) Type of vessel.
   (l) Type of fishing method(s).
   (m) Length (m).
   (n) Beam (m).
   (o) Gross register tonnage (international tonnage).
   (p) Power of main engine(s) (kilowatts).
   (q) Hold capacity (cubic metres).
   (r) Record of the equipment on board which may affect fishing power factors (navigational equipment, radar, sonar systems, weather fax or satellite weather receiver, sea-surface temperature image receiver, Doppler current monitor, radio direction finder).
   (s) Total number of crew (all staff, excluding observers).

3. The following observer data are to be collected for each observed trip:
   (a) Observer's name.
   (b) Observer's organisation.
   (c) Date observer embarked (UTC date).
   (d) Port of embarkation.
   (e) Date observer disembarked (UTC date).
   (f) Port of disembarkation.

B. Catch & Effort Data to be collected for Trawl Fishing Activity

1. Data are to be collected on an un-aggregated (tow by tow) basis for all observed trawls.

2. The following data are to be collected for each observed trawl tow:
   (a) Tow start date (UTC).
   (b) Tow start time (UTC).
   (c) Tow end date (UTC).
   (d) Tow end time (UTC).
   (e) Tow start position (Lat/Lon, 1 minute resolution).
   (f) Tow end position (Lat/Lon, 1 minute resolution).
   (g) Type of trawl, bottom or mid-water.
   (h) Type of trawl, single, double or triple.
   (i) Height of net opening (m).
   (j) Width of net opening (m).
   (k) Mesh size of the cod-end net (stretched mesh, mm) and mesh type (diamond, square, etc).
   (l) Gear depth (of footrope) at start of fishing (m).
   (m) Bottom (seabed) depth at start of fishing (m).
   (n) Gear depth (of footrope) at end of fishing (m).
   (o) Bottom (seabed) depth at end of fishing (m).
   (p) Status of the trawl operation (no damage, lightly damaged*, heavily damaged*, other
   (specify)). *Degree may be evaluated by time for repairing (<=1hr or >1hr)
   (q) Duration of estimated period of seabed contact (minute)
   (r) Intended target species.
   (s) Catch of all species retained on board, split by species, in weight (to the nearest kg).
   (t) Estimate of the amount (weight or volume) of all living marine resources discarded, split by species.
   (u) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.
   (v) Record of sensitive benthic species in the trawl catch, particularly vulnerable or habitat forming species such as sponges, sea-fans or corals.

C. Catch & Effort Data to be collected for Bottom Gillnet Fishing Activity

1. Data are to be collected on an un-aggregated (set by set) basis for all observed bottom gillnet sets.

2. The following data are to be collected for each observed bottom gillnet set:
   (a) Set start date (UTC).
   (b) Set start time (UTC).
   (c) Set end date (UTC).
   (d) Set end time (UTC).
   (e) Set start position (Lat/Lon, 1 minute resolution).
   (f) Set end position (Lat/Lon, 1 minute resolution).
   (g) Net panel ("tan") length (m).
   (h) Net panel ("tan") height (m).
   (i) Net mesh size (stretched mesh, mm) and mesh type (diamond, square, etc)
   (j) Bottom depth at start of setting (m).
   (k) Bottom depth at end of setting (m).
   (l) Number of net panels for the set.
   (m) Number of net panels retrieved.
   (n) Number of net panels actually observed during the haul.
   (o) Actually observed catch of all species retained on board, split by species, in weight (to the nearest kg).
   (p) An estimation of the amount (numbers or weight) of marine resources discarded, split by species, during the actual observation.
   (q) Record of the actually observed numbers by species of all marine mammals, seabirds or reptiles caught.
   (r) Intended target species.
   (s) Catch of all species retained on board, split by species, in weight (to the nearest kg).
   (t) Estimate of the amount (weight or volume) of all marine resources discarded* and dropped off, split by species. * Including those retained for scientific samples.
   (u) Record of the numbers by species of all marine mammals, seabirds or reptiles caught (including those discarded and dropped-off).

D. Catch & Effort Data to be collected for Bottom Long Line Fishing Activity

1. Data are to be collected on an un-aggregated (set by set) basis for all observed longline sets.

2. The following fields of data are to be collected for each set:
   (a) Set start date (UTC).
   (b) Set start time (UTC).
   (c) Set end date (UTC).
   (d) Set end time (UTC).
   (e) Set start position (Lat/Lon, 1 minute resolution).
   (f) Set end position (Lat/Lon, 1 minute resolution).
   (g) Total length of longline set (m).
   (h) Number of hooks for the set.
   (i) Bottom (seabed) depth at start of set.
   (j) Bottom (seabed) depth at end of set.

(k) Number of hooks actually observed during the haul.
(l) Intended target species.
(m) Actually observed catch of all species retained on board, split by species, in weight (to the nearest kg).
(n) An estimation of the amount (numbers or weight) of marine resources discarded* or dropped-off, split by species, during the actual observation. * Including those retained for scientific samples.
(o) Record of the actually observed numbers by species of all marine mammals, seabirds or reptiles caught (including those discarded and dropped-off).

E. Length-Frequency Data to Be Collected

1. Representative and randomly distributed length-frequency data (to the nearest mm, with record of the type of length measurement taken) are to be collected for representative samples of the target species and other main by-catch species. Total weight of length-frequency samples should be recorded, and observers may be required to also determine sex of measured fish to generate length-frequency data stratified by sex. The length-frequency data may be used as potential indicators of ecosystem changes (for example, see: Gislason, H. et al. (2000. ICES J Mar Sci 57: 468-475) Yamane et al. (2005. ICES J Mar Sci, 62: 374-379), and Shin, Y-J. et al. (2005. ICES J Mar Sci, 62: 384-396)).

2. The numbers of fish to be measured for each species and distribution of samples across area and month strata should be determined, to ensure that samples are properly representative of species distributions and size ranges.

F. Biological sampling to be conducted (optional for gillnet and long line fisheries)

1. The following biological data are to be collected for representative samples of the main target species and, time permitting, for other main by-catch species contributing to the catch:
   (a) Species
   (b) Length (to the nearest mm), with record of the type of length measurement used.
   (c) Length and depth in case of North Pacific armorhead.
   (d) Sex (male, female, immature, unsexed)
   (e) Maturity stage (immature, mature, ripe, ripe-running, spent)
2. Representative stratified samples of otoliths are to be collected from the main target species and, time permitting, from other main by-catch species regularly occurring in catches. All otoliths to be collected are to be labelled with the information listed in 1 above, as well as the date, vessel name, observer name and catch position.
3. Where specific trophic relationship projects are being conducted, observers may be requested to also collect stomach samples from certain species. Any such samples collected are also to be labelled with the information listed in 1 above, as well as the date, vessel name, observer name and catch position.

4. Observers may also be required to collect tissue samples as part of specific genetic research programmes implemented by the SC.

5. Observers are to be briefed and provided with written length-frequency and biological sampling protocols and priorities for the above sampling specific to each observer trip.

G. Data to be collected on Incidental Captures of Protected Species

1. Flag members operating observer programs are to develop, in cooperation with the SC, lists and identification guides of protected species or species of concern (seabirds, marine mammals or marine reptiles) to be monitored by observers.

2. The following data are to be collected for all protected species caught in fishing operations:
   (a) Species (identified as far as possible, or accompanied by photographs if identification is difficult).
   (b) Count of the number caught per tow or set.
   (c) Life status (vigorous, alive, lethargic, dead) upon release.
   (d) Whole specimens (where possible) for onshore identification. Where this is not possible, observers may be required to collect sub-samples of identifying parts, as specified in biological sampling protocols.

H. Detection of Fishing in Association with Vulnerable Marine Ecosystems

1. The SC is to develop a guideline, species list and identification guide for benthic species (e.g. sponges, sea fans, corals) whose presence in a catch will indicate that fishing occurred in association with a vulnerable marine ecosystem (VME). All observers on vessels are to be provided with copies of this guideline, species list and ID guide.

2. For each observed fishing operation, the following data are to be collected for all species caught, which appear on the list of vulnerable benthic species:
   (a) Species (identified as far as possible or accompanied by a photograph where identification is difficult).
   (b) An estimate of the quantity (weight (kg) or volume (m^3)) of each listed benthic species caught in the fishing operation.
   (c) An overall estimate of the total quantity (weight (kg) or volume (m^3)) of all invertebrate benthic species caught in the fishing operation.
   (d) Where possible, and particularly for new or scarce benthic species which do not appear in ID guides, whole samples should be collected and suitable preserved for identification on shore.

I. Data to be collected for all Tag Recoveries

1. The following data are to be collected for all recovered fish, seabird, mammal or reptile tags:
   (a) Observer name.
   (b) Vessel name.
   (c) Vessel call sign.
   (d) Vessel flag.
   (e) Collect, label (with all details below) and store the actual tags for later return to the tagging agency.
   (f) Species from which tag recovered.
   (g) Tag colour and type (spaghetti, archival).
   (h) Tag numbers (The tag number is to be provided for all tags when multiple tags were attached to one fish. If only one tag was recorded, a statement is required that specifies whether or not the other tag was missing)
   (i) Date and time of capture (UTC).
   (j) Location of capture (Lat/Lon, to the nearest 1 minute)

(k) Animal length / size (to the nearest cm) with description of what measurement was taken (such as total length, fork length, etc).
(l) Sex (F=female, M=male, I=indeterminate, D=not examined)
(m) Whether the tags were found during a period of fishing that was being observed (Y/N)
(n) Reward information (e.g. name and address where to send reward)

(It is recognised that some of the data recorded here duplicates data that already exists in the previous categories of information. This is necessary because tag recovery information may be sent separately to other observer data.)

J. Hierarchies for Observer Data Collection

1. Trip-specific or programme-specific observer task priorities may be developed in response to specific research programme requirements, in which case such priorities should be followed by observers.

2. In the absence of trip- or programme-specific priorities, the following generalised priorities should be followed by observers:

   (a) Fishing Operation Information
   - All vessel and tow / set / effort information.

   (b) Monitoring of Catches
   - Record time, proportion of catch (e.g. proportion of trawl landing) or effort (e.g. number of hooks), and total numbers of each species caught.
   - Record numbers or proportions of each species retained or discarded.

   (c) Biological Sampling
   - Length-frequency data for target species.
   - Length-frequency data for main by-catch species.
   - Identification and counts of protected species.
   - Basic biological data (sex, maturity) for target species.
   - Check for presence of tags.
   - Otoliths (and stomach samples, if being collected) for target species.
   - Basic biological data for by-catch species.
   - Biological samples of by-catch species (if being collected)
   - Photos

3. The monitoring of catches and biological sampling procedures should be prioritised among species groups as follows:

Species	Priority (1 highest)
Primary target species (such as North Pacific armorhead and splendid alfonsino)	1
Other species typically within top 10 in the fishery (such as mirror dory, and oreos)	2
Protected species	3
All other species	4

The allocation of observer effort among these activities will depend on the type of operation and setting. The size of sub-samples relative to unobserved quantities (e.g. number of hooks/panels examined for species composition relative to the number of hooks/panels retrieved) should be explicitly recorded under the guidance of member country observer programmes.

K. Coding Specifications to be used for Recording Observer Data

1. Unless otherwise specified for specific data types, observer data are to be collected in accordance with the same coding specifications as specified in this Annex.

2. Coordinated Universal Time (UTC) is to be used to describe times.

3. Degrees and minutes are to be used to describe locations.

4. The following coding schemes are to be used:
   (a) Species are to be described using the FAO 3 letter species codes.
   (b) Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes.
   (c) Types of fishing vessel are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes.

5. Metric units of measure are to be used, specifically:
   (a) Kilograms are to be used to describe catch weight.
   (b) Metres are to be used to describe height, width, depth, beam or length.
   (c) Cubic metres are to be used to describe volume.
   (d) Kilowatts are to be used to describe engine power

Annex 6-1

Monitoring survey plan for the detection of strong recruitment of North Pacific armorhead

➢ Monitoring period and location

Nishida et al. (2016) estimated the recruitment period of North Pacific armorhead (NPA) based on the temporal variation in CPUE and fatness index (FI) from 2010 to 2014. Recruitment of this species probably started in between January and March, because the percentage of higher FI individuals (FI ≥ 0.3) increased in these months. Nominal CPUEs increased between February and early May following the rise of the percentage of individuals with higher FI in years of strong recruitments. Generally, sea condition is not appropriate in February. Therefore, the monitoring period is set from March to June every year.

Miyamoto et al. (2017) identified fished seamounts in the Emperor Seamounts region on the basis of historical data sets currently available for commercial bottom fisheries in the area. They also analyzed recent Japanese scientific observer data to demonstrate the fine-scale distribution of fishing efforts and to characterize the current fishing area within the fished seamounts. Based on these results, seamounts which are frequently used as fishing grounds for NPA were extracted and sea areas with high fishing efforts for trawl fishing were set as monitoring blocks (Table 1, Figs. 1-1 and 1-2).

Table 1. The location of monitoring blocks.

Survey Gear	**Seamount**	**Latitude**	**Longitude**	**Fig. No.**	**Remarks**
Trawl	Koko (South eastern)	34°51′ N -35°04′ N	171°49′ E -172°00′ E	Fig. 1-1	Except closed area precautionary for potential VME conservation (this CMM, paragraph 4H)
Trawl	Kammu (North western)	32°10′ N -32°21′ N	172°44′ E -172°57′ E	Fig. 1-2	

➢ Monitoring surveys methods

In each monitoring block, vessels conduct monitoring surveys with bottom trawl from March to June. For one monitoring survey, trawl net is towed for one hour. Respective surveys should be conducted at least one week apart.

- **Collecting data and samples**

Monitoring survey data are recorded according to the scientific observer manual of NPFC (Annex 4).

- ✓ North Pacific armorhead (NPA)

For each survey operation, the total weight of NPA is measured. Nominal-CPUE (Trawl; kg / hour) is calculated. From NPA samples, 100 individuals are randomly extracted, the individuals are measured for fork lengths (FL) and body heights (BH). The composition of FL and FI (BH / FL) are determined for each survey operation.

- ✓ Splendid alfonsino (SA)

For each survey operation, the total weight of SA is measured. Nominal-CPUE (Trawl; kg / hour) is calculated. From SA samples, 100 individuals are randomly extracted, the individuals are measured for fork lengths (FL). The composition of FL is determined for each survey operation.

- Reporting

Scientific observer transmits the collected data immediately after the respective survey to the NPFC secretariat via flag Members.

- Criteria for strong recruitment of NPA

The criteria for one monitoring survey by trawl is as follows based on the best scientific knowledge available on trawl fishery (Nishida et al. (2016)): trawl nominal CPUE > 10 t/ h and individuals of FI > 0.3 account for 80% or more.

It is considered that a strong recruitment is occurring if the above criteria are met in four consecutive surveys by trawl in two seamounts. The four consecutive surveys that meet the criteria need to be located in different months, and if all of the four surveys are conducted within a same month, it will not be considered that a strong recruitment is occurring.

- Future use and contribution to the Adaptive Management process

The survey is conducted as part of the Adaptive Management process for NPA under the management objective that sufficient spawning stocks will be left uncaught to let them spawn at least once. The results will be used for recruitment strength and are expected to contribute to the setting of more concrete management objectives for the Adaptive Management process for NPA.

References

Miyamoto M, Okuda T, and Kiyota M. 2017. Identification of existing fishing grounds and unfished areas in the Emperor Seamounts region. NPFC-2017-SSC VME02-WP01.

Nishida, K., Kiyota, M., Yonezaki, S., and Okuda, T. 2016. Estimation of recruitment period of North Pacific armorhead, *Pentaceros wheeleri* based on CPUE and fatness index. NPFC01-2016-SSC NPA01-WP02.

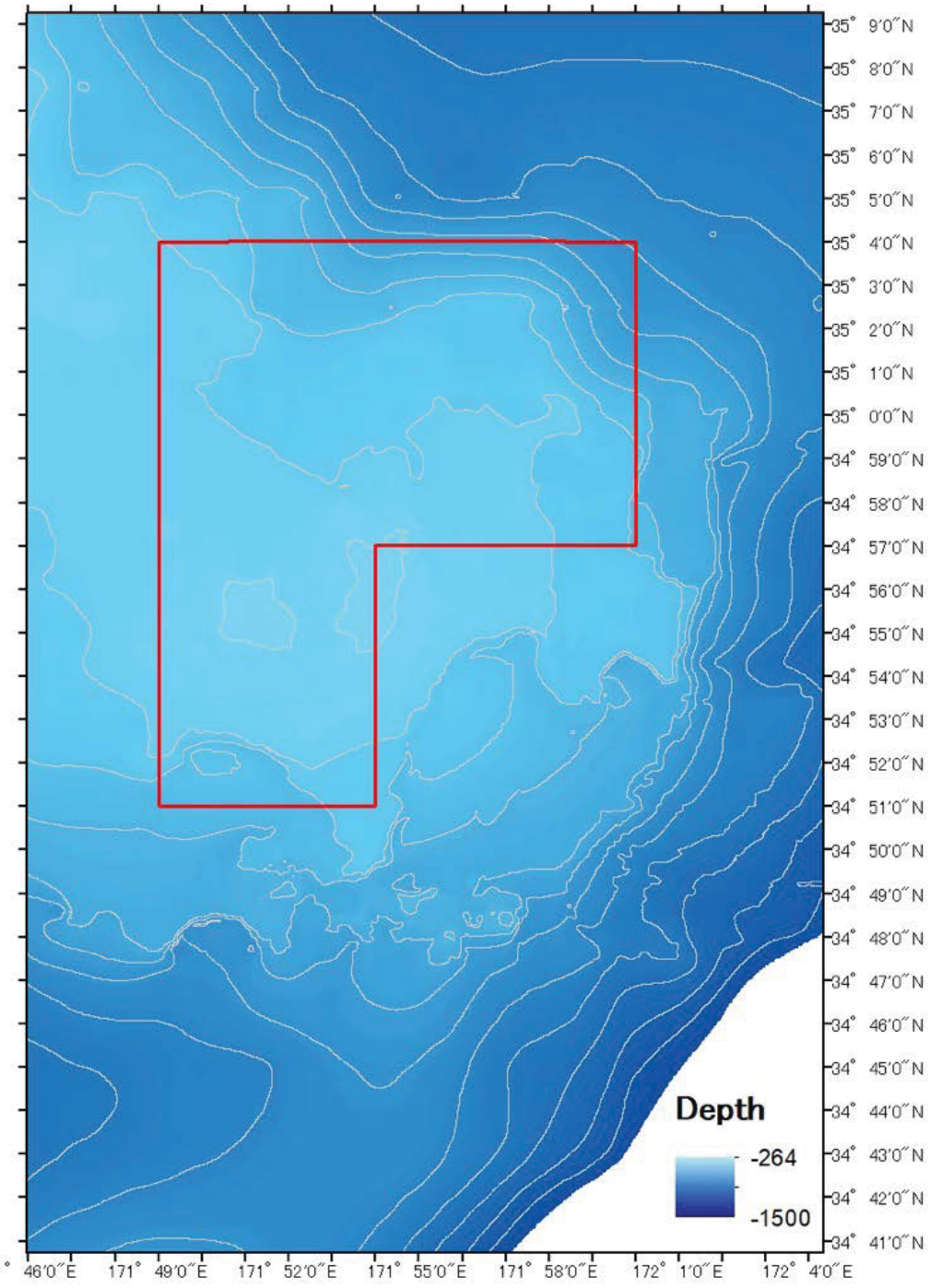


Fig. 1-1. Monitoring block by trawl fishery in the south eastern part of Koko Seamount. Except closed area precautionary for potential VME conservation (This CMM, paragraph 4 H)

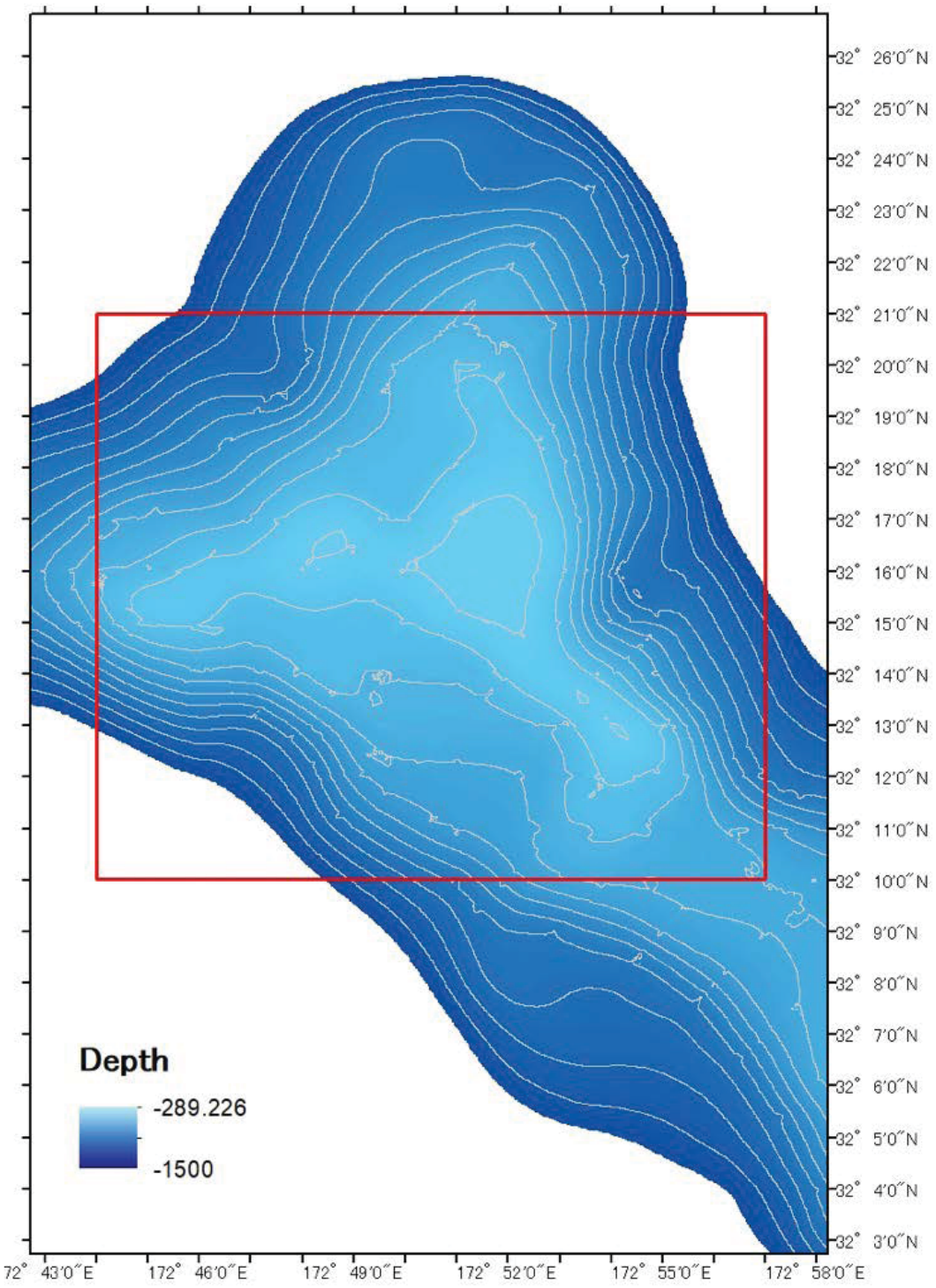


Fig. 1-2. Monitoring block by trawl fishery in the north western part of Kammu Seamount.

Annex 6-2

Protocol for the detection of strong recruitment of North Pacific armorhead

1. Purpose

This protocol is 1) to specify transmission of data obtained in the monitoring survey and a protocol for circulating the detection of strong recruitment of North Pacific armorhead, and 2) to specify areas closed in the Emperor seamounts when the strong recruitment is detected.

2. Transmission of data

Data obtained in the monitoring survey is transmitted from observers on the vessels participating in the survey to the Science Manager of NPFC Secretariat via the flag Member with appropriate manners. Data should be transmitted as soon as possible after being obtained.

3. Announcement of detecting strong recruitment

The Science Manager analyzes the data based on the pre-determined process in the monitoring survey plan (Annex 6-1). If the criteria for detecting strong recruitment are met based on the analysis, the Executive Secretary circulates the detection of strong recruitment to all the Members and announces that paragraph 4-N of this CMM is applied for North Pacific armorhead as a management measure, as soon as possible after the analysis is completed. Members immediately notify the vessels with its own flags of the announcement by the Executive Secretary (Fig. 1).

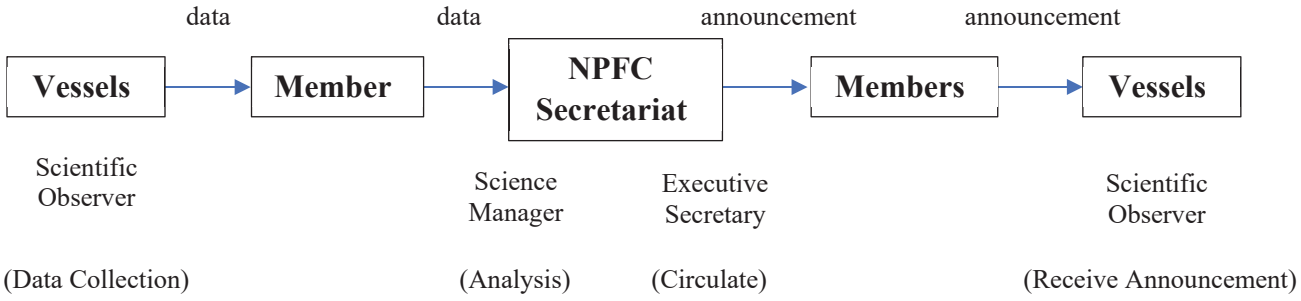


Fig. 1 Diagram for the announcement of strong recruitment

Annex

Statement on Pacific Saury

(Japan-Russia Joint Statement)

Within the Convention on the Conservation and Management of High Seas Fisheries Resources in the North Pacific Ocean, the coastal States in the north western Pacific ("the coastal States") have a long history of utilizing Pacific saury and have been dependent on the stock in maintaining their local coastal communities. The coastal States have been making consistent and arduous efforts to ensure the sustainable use of the stock, by setting allowable catch limits and restrictions on the number of fishing vessels, vessel tonnage, power of fish aggregating lights and time closures during the major spawning season.

In contrast, on the high seas, in the Convention Area, fishing activities for Pacific saury rapidly expanded, which was followed by a rapid decrease in actual catches, and then the declining trend is persistently continuing. Such situation is particularly serious for the coastal States' traditional fisheries. Last year, Pacific saury fisheries of the coastal States experienced historical low catches, causing serious adverse effects on local coastal communities.

Despite such a negative trend in Pacific saury fisheries, NPFC still has no effective conservation and management measures in place to regulate fishing of Pacific saury in the high seas. Furthermore, IUU fishing activities by vessels without nationality are relentlessly continuing. Due to the expansion of fishing activities on the high seas associated with IUU fishing activities, Pacific saury is experiencing a high risk of decline of its stock.

Recalling Article 64 of UNCLOS, paragraph 2(a) of Article 7 of UNFSA and Article 3(i) of the Convention on the Conservation and Management of High Seas Fisheries Resources in the North Pacific Ocean, there is an urgent need that NPFC takes effective actions on conservation and management of Pacific saury, particularly with respect to setting allowable catch limits in the Convention Area. It is strongly urged that the NPFC members work together towards adopting effective conservation and management measures for Pacific saury.

Annex
CMM 2018-08

CONSERVATION AND MANAGEMENT MEASURE FOR PACIFIC SAURY

The North Pacific Fisheries Commission (NPFC),

Recognizing that Small Scientific Committee (SSC) on Pacific Saury and the Scientific Committee (SC) completed the provisional stock assessment including Maximum Sustainable Yield (MSY) in accordance with the timeframe specified in CMM 15-02;

Following the recommendation by the SC in 2017 that CMM 15-02 is maintained in its current form and fishing efforts in 2018 will not be expanded, or that the Commission develop a new management measure based on the stock status and MSY mentioned in the SC and SSC reports, with a consideration of the uncertainties, and the recommendation by the TCC in 2017 that there is a need to improve the precision of the assessment of compliance with CMM 15-02, and such work should be done intersessionally to allow discussion at the 3rd TCC meeting;

Reaffirming the General Principles, Article 3 of the Convention, in particular, paragraph (b) stipulating that measures are adopted, based on the best scientific information available, to ensure that fisheries resources are maintained at or restored to levels capable of producing maximum sustainable yield, and paragraph (f) stipulating that preventing or eliminating overfishing and excess fishing capacity and ensuring that levels of fishing effort or harvest levels are based on the best scientific information available and do not exceed those commensurate with the sustainable use of the fisheries resources;

Adopts the following conservation and management measure in accordance with Article 7 of the Convention:

1. Members of the Commission, not described under Paragraph 2, and that are currently fishing for Pacific saury shall refrain from expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for Pacific saury from the historical existing level.

2. Members fishing for Pacific saury in areas of their jurisdiction that are adjacent to the Convention Area shall refrain from rapid expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for Pacific saury from the historical existing level.[4]

3. Members of the Commission participating in Pacific saury fisheries in areas under national jurisdiction adjacent to the Convention Area are, in accordance with relevant provisions of Article 3 of the Convention, requested to take compatible measures in paragraph 2.

[4] Paragraph 2 applies to Russia and Japan

4. Development of new fishing activity for the Pacific saury fishery in the Convention Area

   by Members without documented historical catch for Pacific saury in the Convention Area shall be determined in accordance with relevant provisions, including but not limited to Article 3, paragraph (h) and Article 7, subparagraphs 1(g) and (h) of the Convention.

5. Members of the Commission shall ensure that fishing vessels flying its flag operating in the Convention Area to fish Pacific saury be equipped with an operational vessel monitoring system that is activated at all times.

6. In order to prevent discards and contribute to the proper stock assessment, Members of the Commission shall take necessary measures to ensure that fishing vessels flying their flags in the Convention Area retain all the catch of Pacific saury on board.

7. In order to protect juvenile fish, Members of the Commission are encouraged to take necessary measures for fishing vessels flying their flag to refrain from fishing in areas where juvenile fish are greater than 50% of the Pacific saury catch during fishing operation[5]. The SC and its subsidiary Small Scientific Committee on Pacific Saury will submit to the Commission relevant scientific information on geographical distribution of juvenile fish in the Convention Area, and its migration patterns.

8. The SC and its subsidiary SSC on Pacific Saury shall work to provide the Commission with a consensus stock assessment result beginning in 2019 and scientific guidance necessary for the development of harvest control rules for Pacific saury sufficient to prevent a declining trend of the stock.

9. The Commission shall request that CNCPs abide by the terms of this CMM in order to achieve and maintain CNCP status.

10. This CMM replaces CMM 2017-08 and will be reviewed on the regular basis.

[5] Fishing operation means short-term fishing activities

Annex
CMM 2018-07

CONSERVATION AND MANAGEMENT MEASURE FOR CHUB MACKEREL

The North Pacific Fisheries Commission (NPFC),

Recognizing that outcomes of the small ad hoc workshop for the scientific analysis of chub mackerel stock were presented to the Scientific Committee (SC) in April 2017 and the SC recommended to establish the Technical Working Group (TWG) on Chub Mackerel Stock Assessment;

Noting that CMM 2016-07 states the SC will complete the stock assessment of chub mackerel as soon as practicable, even if such assessment is provisional, and provide advice and recommendations to the Commission in accordance with Article 10, paragraph 4(b) of the Convention;

Reaffirming the General Principles provided in Article 3 of the Convention, in particular, paragraph (h) stipulating that any expansion of fishing effort does not proceed without prior assessment of the impacts of those fishing activities on the long-term sustainability of fisheries resources;

Recalling that concern was expressed on an adverse impact on the stock of chub mackerel given the rapid increase in vessels that appear to be fishing for chub mackerel in the Convention Area, as articulated in paragraphs 9 and 10 of Report of the 1st Meeting of the Technical and Compliance Committee;

Adopts the following conservation and management measure in accordance with Article 7 of the Convention:

1. Members of the Commission and Cooperating non-Contracting Parties (CNCP) with substantial harvest of chub mackerel in the Convention Area shall refrain from expansion, in the Convention area, of the number of fishing vessels entitled to fly their flags and authorized to fish for chub mackerel based on the number of vessels from the historical existing level until the stock assessment by the SC has been completed.

2. Members and Cooperating non-Contracting Parties without substantial harvest of chub mackerel in the Convention Area are encouraged to refrain from expansion, in the Convention area, of the number of fishing vessels entitled to fly their flags and authorized to fish for chub mackerel from the historical existing level until the stock assessment by the SC has been completed.

3. Members of the Commission participating in chub mackerel fisheries in areas under national jurisdiction adjacent to the Convention area are requested to take compatible measures in paragraph 1.

4. Development of new fishing activity for the chub mackerel fishery in the Convention Area by Members without documented historical catch for chub mackerel in the Convention Area shall be determined in accordance with relevant provisions, including but not limited to Article 3, paragraph (h) and Article 7, subparagraphs 1(g) and (h) of the Convention.

5. Members of the Commission and CNCP shall ensure that fishing vessels flying their flag operating in the Convention Area to fish chub mackerel are to be equipped with an operational vessel monitoring system that is activated at all times.

6. Members of the Commission and CNCPs shall provide their data on chub mackerel separated by the Convention Area and the areas under national jurisdiction adjacent to the Convention Area in accordance with the data requirements adopted by the Commission in the Annual Report by the end of February, every year. The Commission shall review such information at the annual meeting of every year.

7. Members of the Commission and CNCPs shall cooperate to take necessary measures including sharing information, in order to accurately understand the situation and eliminate IUU fishing for chub mackerel.

8. The SC and its subsidiary Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA) will complete the stock assessment of chub mackerel as soon as possible in accordance with the terms of reference agreed at the TWG CMSA meeting in December 2017, even if such assessment is provisional, and provide advice and recommendations to the Commission in accordance with Article 10, paragraph 4(b) of the Convention. For the purpose of this, the TWG will meet in December 2017 and in 2018.

9. After chub mackerel stock assessment has been completed, the provisions in Paragraph 1 shall be reviewed by the Commission and those provisions shall not be a precedent to hinder those Members who are not harvesting substantial amounts of chub mackerel in the Convention Area to develop their own chub mackerel fisheries in the Convention Area noting the Commission shall regularly review chub mackerel harvests in the Convention Area by all Members.

10. This management measure shall expire and be replaced by the measure to be adopted by the Commission based on the advice and recommendations from the Scientific Committee.

11. This CMM is an amendment of the NPFC CMM 2017-07.

Annex

Interim Guidance for Management of Scientific Data Used in Stock Assessments

This Interim Guidance is intended to apply while the NPFC develops comprehensive rules and procedures governing the security of, exchange of, access to and dissemination of data held by, or accessed by Members of the Commission, its subsidiary bodies, the Secretariat, and by service providers, contractors, or consultants acting on their behalf or others so authorized for access by the Secretariat.

1. Objectives

   The objectives of this Interim Guidance are (1) to support stock assessments and accumulation of scientific knowledge of fisheries resources under the Commission's jurisdiction, (2) to encourage cooperation on scientific analyses among Members, and (3) to establish an interim guidance on handling scientific data.

2. Scientific Data included in Members' Annual Reports

   Scientific data (e.g., catch amount, number of vessels, number of fishing days and so on) included in Members' Annual Reports should be uploaded to the public section of the NPFC website for public access and use.

3. Other scientific data, not included in Members' Annual Reports, submitted for use in stock assessment

   The Secretariat should not disclose Members' scientific data submitted by means other than Members' Annual Reports.

   Members may cite and/or use such data when working on matters under consideration by the Scientific Committee/SSCs.

   If a Member or cooperating non-Member wishes to cite and/or use these data for work that is intended to be conducted or shared outside of the NPFC, such Member or non-Member should consult with the data provider(s) through the Secretariat, stating 1) the data subject to the request, and 2) the purpose for which the data is intended to be used. The Secretariat should immediately notify the data provider(s) of the request. The data provider(s) should inform the Secretariat within 30 calendar days whether to accept or reject the request. If the data provider(s) reject the request, the data provider(s) should state the reason(s) for the rejection. If the data provider(s) accept the request, the data provider(s) may request an agreed-upon credit line in any subsequently-created product. Those who cited/used data should not distribute the data further nor use it for the purpose not declared.

   If the Secretariat proposes to outsource analyses of such scientific data to a contractor, the Secretariat should seek agreement from all the data providers concerned. If all data providers do not agree, the relevant data should not be disclosed to the contractor.

Annex

List of NPFC Meetings and Workshops

Meeting	Date and Place	Host Member
VME & BF DATA WS (3 days)	7-9 November, Xiamen	China
TWG PSSA03 (4 days)	12-15 November, Xiamen	China
BRP/HCR/MSE WS (2 days)	4-5 March 2019, Yokohama	Japan
TWG PSSA04 (4 days)	6-9 March 2019, Yokohama	Japan
TWG CMSA02 (3 days)	27 Feb - 1 Mar 2019, Yokohama	Japan
SSCs VME04, BF02, PS04, SC04	15-26 April 2019, TBD	Korea
TCC04, FAC03, COM05	11-18 July 2019, TBD	Japan

Note: There will be TCC SWG Meetings on Vessel Registry, Assessing Compliance (CMS), VMS and Operations. These meetings will be scheduled soon and will be held by Webex with the possibility of combined SWG meeting prior to TCC subject to availability of funding and concurrence by Members.

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