North Pacific Fisheries Commission

NPFC-2023-SC08-WP16

1st joint meeting of the Small Working Groups on NFS, JFS, JS, and BM
June 19, 2023 (9 am – 1 pm Tokyo time)
WebEx

Summary

Agenda Item 1. Opening of the Meeting

The 1st joint meeting of the Small Working Groups on NFS, JS, JFS, and BM in 2023 commenced at 9am on 19 June 2023 Tokyo time in the format of video conferencing via WebEx. The meeting was attended by Members from Canada (Janelle Curtis, Chris Rooper), China (Libin Dai, Richard Kindong, Qiuyun Ma, Yongchuang Shi, Jintao Wang, Luoliang Xu, Wei Yu, Heng Zhang), Japan (Kazuhiro Oshima, Masa-aki Fukuwaka, Kazunari Higashiguchi, Hajime Matsui, Ryuichi Matsukura, Shota Nishijima, Bungo Nishizawa, Suguru Okamoto, Ryuji Yukami), Korea (Jeongseok Park, Sanggyu Shin, Hyejin Song), Russia (Vladimir Kulik, Emiliya Chernienko, Igor Chernienko), Chinese Taipei (Wen-Bin Huang, Chih-Shin Chen, Hsueh Jung Lu), and Vanuatu (Mei-chin Juan) as well as the Secretariat (Robert Day, Alex Zavolokin, Sungkuk Kang).

The meeting was opened by Dr. Janelle Curtis (SC Chair, Canada) who served as the Chair of this joint meeting and was supported by the Leads of the four SWGs: Dr. Luoliang Xu (China), Dr. Chris Rooper (Canada), Dr. Kazuhiro Oshima (Japan), and Dr. Shota Nishijima (Japan).

Agenda Item 2. Adoption of Agenda

Participants adopted the agenda without amendments.

Agenda Item 3. Consideration of top-down prioritization and capacity for conducting stock assessment of NFS, JFS, JS, and BM

The Chair reported on the outcomes of the discussions at SC07 on the prioritization of the stock assessment for NFS, JFS, JS, and BM. SC07 decided that the priority should be given to NFS, and the top-down prioritization of other species, as well as the capacity and funding availability for the stock assessment of these species, should be discussed at the next intersessional meeting of the four SWGs.

Top-down prioritization

Japan presented a summary on the need of stock assessment for NFS, JFS, JS, and BM.

Species	Comments
NFS	• NFS and fisheries for NFS are dominantly distributed in the Convention Area (CA) • The SC agreed that NFS is a priority for stock assessment (SA) (SC07 2022). • Need to be define seasonal cohorts spatially and temporally.
JFS	• Limited catch amount has been yielded in CA. • Large amount of catch in the Sea of Japan by coastal states. • Japan annually conducts the JFS stock assessments including catch by Japan, China and Russia. • NPFC Members can monitor the Japanese domestic SA results instead of conducting SA.
JS	• Distribution expand to CA in high-productivity phase • Extremely small catch in CA under low-productivity phase • Japan annually conducts the JS stock assessment including catch by Japan, China and Russia. • NPFC Members can monitor the Japanese domestic SA results instead of conducting SA.
BM	• Lower economic value than other priority species • Small catch in CA • Japan annually conducts the BM stock assessment including catch by Japan, China and Russia. • NPFC Members can monitor the Japanese domestic SA results instead of conducting SA.

The results of the domestic stock assessment for JFS, JS and BM conducted by Japan are peer-reviewed annually and are available online (in Japanese) at https://abchan.fra.go.jp/hyouka/.

China informed participants that it undertakes domestic stock assessment for NFS. China was requested to present the results of its stock assessment for NFS at the next intersessional joint SWG meeting.

China pointed out that JFS's life history is similar to that of NFS: both species have two cohorts with similar migration patterns. Thus analyses and the stock assessment approach of JFS will be useful for the SWG NFS's analyses and development of a SA model for NFS.

Participants discussed the utility of domestic stock assessments conducted by Japan (and other Members), including how to transmit them to the Commission to better inform its decisions on the management of JFS, JS and BM. They raised a question about sharing the code of stock assessment models for transparency.

Participants **agreed** that the results of the domestic stock assessment of JFS, JS and BM conducted by Japan will be observed by SC at its annual meeting, incorporated in the species summary documents and submitted to the Commission.

Japan clarified that it used all Members' catch data and only Japan's catch-at-size (CAS) and catch-at-age (CAA) data for the stock assessment of these three species. Including other Members' CAS

and CAA data would improve the stock assessments of JFS, JS and BM.

Capacity for stock assessment of NFS and funding availability

The Chair made a proposal to hire a contractor, using funds from the Special Project Fund, to identify potential stock assessment models and data needed to conduct stock assessment for NFS.

The Science Manager informed participants that the Commission accumulated funds for special projects of SC and other subsidiary bodies. The NPFC Performance Review panel recommended that the Commission encourage the SC and TCC to develop proposals for funding consideration from funds set aside in the Special Projects Fund.

Agenda Item 4. Review and update of five-year work plans and 2023 tasks for the SWGs on NFS, JFS, JS, and BM

Participants reviewed the SC work plan related to NFS, JFS, JS, and BM. They re-affirmed the tasks for 2023 to update the species summaries for NFS, JFS, JS, and BM, collate data and develop data collection templates for BM and collate data and determine spatial structure of stocks for JFS.

The SWG NFS will continue to work toward baseline stock assessment for NFS intersessionally, including CPUE standardization, but may not be able to complete this task in 2023.

Japan **was requested** to provide a prioritized list of data for JFS, JS and BM from Members which will be needed to improve Japan's domestic stock assessments. Japan made a presentation with more details about those data under agenda item 6.2 (see below).

Agenda Item 5. Discussion of tasks related to sharing data, calculating nominal CPUE, undertaking spatial analyses, and differentiating between CM and BM.

5.1 Neon Flying Squid

Dr. Luoliang Xu led discussions of the SWG NFS.

5.1.1 Update and review Members' catch and effort data

The Lead presented the updated catch and effort data up to 2022 (available on the Collaboration website under SWG NFS). The total catch and effort have decreased in recent years. However, it should be noted that effort data provided by Members in their annual reports are not separated for NFS and JFS.

5.1.2 Calculate nominal CPUE, discussion about (1) member's nominal CPUEs calculated before the meeting, (2) CPUE standardization, and (3) possibility of estimating joint CPUE estimates

China gave a presentation on the nominal CPUE of NFS from Chinese squid jigging fisheries in the Northwestern Pacific Ocean from 1995-2022 (available on the Collaboration website under SWG NFS).

Japan presented a summary of NFS data available, including fishery-dependent (jigging fishery) and fishery-independent (driftnet survey) data. It also provided the preliminary results of CPUE standardization. The presentation is available on the Collaboration website under SWG NFS.

Russia reported that the catch of NFS has been very small or zero in recent years. Historical data from NFS fisheries are available.

Chinese Taipei presented nominal CPUE from its NFS fishery (available on the Collaboration website under SWG NFS). It suggested to develop a protocol for CPUE standardization by type of fishing gear.

Vanuatu provided brief information about its NFS fishery. It pointed out the occasional nature of this fishery, with the target species switching between Pacific saury and NFS.

All Members operating NFS fisheries **agreed** to share spatial information on catch and effort of NFS (monthly, 1 x 1 degree), subject to approval through their internal process. A data sharing template is available on the Collaboration website (Summary of the 2nd joint meeting in 2022, Annex A).

Members were encouraged to share data **by 25 July** (2 weeks before the next meeting), if possible, or inform the Secretariat about the expected date of their data submission.

After sharing and reviewing the data, the SWG NFS will conduct joint CPUE standardization.

5.2 Japanese Flying Squid

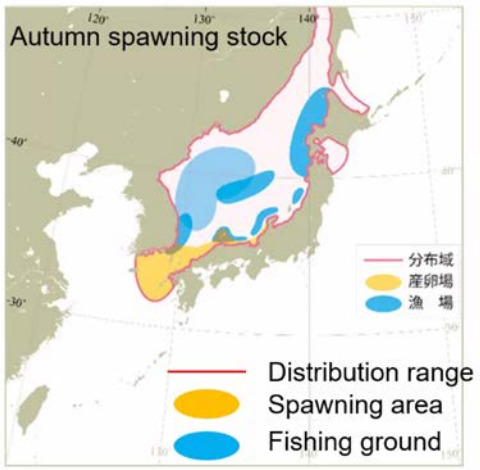
Dr. Kazuhiro Oshima led discussions of the SWG JFS.

5.2.1 Update and review Members' catch and effort data

The Lead gave a brief review of the catch and effort data for JFS. The presentation is available on the Collaboration website under SWG JFS.

5.2.2 Continue research on the spatial structure of the JFS life history and stock relative to the fishing footprint

The Lead updated the map of JFS distribution, spawning area and fishing grounds based on Japanese data and encouraged other Members to further refine the map.



5.3 Japanese Sardine

Dr. Chris Rooper led discussions of the SWG JS.

5.3.1 Update Members' estimated catch and effort

The Lead gave an update on annual catch and effort of JS. He also presented a figure of time series of nominal CPUE from the data shared by China, Japan, Russia and Chinese Taipei. The presentation is available on the Collaboration website under SWG JS.

5.3.2 Calculate nominal CPUE

China made two presentations: (1) nominal CPUE from its JS fishery in 2014 - 2022 and (2) fork length and age of JS (available on the Collaboration website under SWG JS).

Russia presented a figure of nominal CPUE calculated as annual catch divided by effort from summary tables by gear (purse seine, mid-water trawl, other) and area (Convention Area and Russia's EEZ). Due to the change in the fishing method (i.e. introduction of fish pumps to transfer fish from net to boat), nominal CPUE does not reflect actual stock dynamics. An interaction term for vessel id and gear id is needed for standardization to resolve this issue. Russia also pointed out the effect of SST and suggested that increasing catch of JS may be also related to oceanographic changes.

5.4 Blue Mackerel

Dr. Shota Nishijima led discussions of the SWG BM.

5.4.1 Update Members' estimated catch and effort

The Lead presented catch and effort statistics up to 2022 (available on the Collaboration website under SWG BM). He noted combined data for chub mackerel (CM) and BM and a significant decrease (43%) in the catches of Japan and Russia.

5.4.2 Continue to explore options for distinguishing BM and chub mackerel catch

The Lead recalled the methods for distinguishing BM and CM catch presented by Japan and Russia last year. No updates were made.

5.4.3 Collect data on size and/or age composition of BM, if possible

With reference to Manabe et al (2020) (NPFC-2020-TWG CMSA03-WP02), the Lead reminded participants about the methodology for collecting catch and age data in Japan.

China gave an overview of its data on fork length and age of BM (available on the Collaboration website under SWG BM). China highlighted the high proportion of BM (about 25% of mackerel catch) in 2022.

Agenda Item 6. Focus and date of 2nd intersessional meeting

6.1 Selection of date

Participants **agreed** to hold the next joint meeting of the SWGs NFS, JS, JFS, and BM on 8 August from 9am – 1pm Tokyo time.

6.2 Identification of intersessional activities to address remaining tasks

The Chair presented the list of remaining tasks for intersessional work (agenda items 6.2.1-6.2.9 below).

Japan suggested to add a new task to discuss the establishment of a new formal scientific group to conduct stock assessment for NFS.

Information to be shared towards stock assessment of the top-prioritized species

6.2.1 Listing of stock assessment model candidates applied to stock assessment

6.2.2 Discuss data preparation for stock assessment

6.2.3 Discuss how to define stocks of the top-prioritized species

6.2.4 Discuss possibility to share existing stock assessment code for developing a stock assessment model

Members **agreed** to present their domestic stock assessment results at the next joint meeting of the SWGs.

Japan made a short presentation on the stock assessment of JS and BM (available on the Collaboration website under SWG BM) and pointed out the lack of data on the age composition in Chinese and Russian catch for JS and lack of data on the portion of BM in the combined mackerel catch as well as age composition for BM.

Japan requested other Members to intersessionally share length frequency data and their length-weight relationships, if available, for improving its domestic stock assessments and incorporating them in the species summary documents.

Canada suggested that the summary information on stock assessment of JFS, JS and BM would include time series of catch, time series of biomass, SSB and recruits and the Kobe plot.

Members **agreed** to share length frequency data and length-weight relationship data with Japan before the next joint meeting of SWGs, specifically **by 25 July**, if possible.

Length frequency data

Length data per individual

ID	Year	Month	(Fork) Length (cm)
1	2015	1	25.4
2	2015	1	36.3
…	…	…	…
XX	2022	12	32.7

OR

The number of sampled individuals

Bins of (fork) length

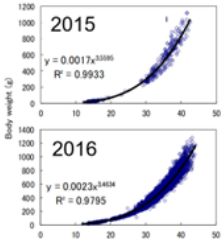
Year	Month	5	6	…	49	50
2015	1	0	1	…	0	0
2015	2	0	2	…	1	0
…	…	…	…	…	…	…
2022	12	0	0	…	0	0

Length-weight relationship

Length-frequency data per individual

ID	Year	Length (cm)	Weight (g)
1	2015	26.0	220
2	2015	33.2	410
…	…	…	…
XX	2022	35.4	420

OR



The info of estimated equations

Year	a	b
2015	0.0017	3.56
2016	0.0023	3.46
…	…	…
2022	0.0036	3.50

※ $y = a \times x^b$

Update of species summaries

6.2.5 Evaluate environmental variables on recruitment, life history parameters, and fisheries population dynamics (for NFS, JFS, JS, BM)

6.2.6 Share literature relevant to understanding the fishery population dynamics, including unpublished literature if possible (NFS, JFS, JS)

6.2.7 Review the latest domestic stock assessment conducted by Japan (for JFS, JS, BM)

No amendments to these tasks were made.

Differentiation between CM and BM

6.2.8 Review historical catch and estimate the proportion of BM and chub mackerel, if possible

6.2.9 Review the feasibility of calculating the proportion of BM and chub mackerel catch by gear

No amendments to these tasks were made.

Agenda Item 7. Recommendations from the NPFC Performance Review relevant to SWGs on NFS, JS, JFS, and BM.

7.1 Discuss the possibility of linking footprint and effort data using GIS tools for NFS, JFS, and JS

This agenda item was deferred to the next meeting.

Agenda Item 8. Leadership of SWGs on NFS, JS, JFS, and BM

The SWG JFS Lead, Dr. Oshima informed participants about stepping down from this post. The SWG JFS selected Dr. Hajime Matsui (Japan) as the new Lead.

The SWG NFS Lead, Dr. Xu expressed interest in continuing his role, however he may have to leave due to other job commitments in future.

Dr. Rooper and Dr. Nishijima will continue to lead the SWG JS and SWG BM, respectively.

Agenda Item 9. Close of the Meeting

The meeting closed at 13:20pm on 19 June 2023 Tokyo time.