NPFC

North Pacific Fisheries Commission

1st meeting of the Small Working Group on VME
June 20, 2024 (9 am – 1 pm Tokyo time)
WebEx

Summary

Agenda Item 1. Opening of the Meeting

The 1st intersessional meeting of the Small Working Group on Vulnerable Marine Ecosystems (SWG VME) in the 2024 operational year commenced at 9 am on 20 June 2024 Tokyo time in the format of video conferencing via WebEx. The meeting was attended by Members from Canada (Janelle Curtis, Chris Rooper), China (Qiuyun Ma), Japan (Kota Sawada, Yumiko Osawa, Mai Miyamoto, Moto-omi Yamaguchi, Satoi Arai, Chris Ayer), Korea (Hye-won Moon, Hyejin Song), Russia (Oleg Katugin, Vladimir Kulik, Dmitrii Antonenko, Tatiana Dautova), and the USA (Don Kobayashi) as well as the Secretariat (Alex Zavolokin, Sungkuk Kang, Jihwan Kim). Amy Baco-Taylor (DSCC) and Tony Thompson (FAO) attended the meeting as observers. The meeting was opened by Janelle Curtis (Canada) who served as the SWG VME Lead.

Agenda Item 2. Adoption of Agenda

There were no amendments to the agenda. The Lead informed participants about presentations from observers to be given under agenda item 4.

Agenda Item 3. Review of SWG VME Tasks for 2024

The Lead updated participants on the tasks assigned by SSC BF-ME04 to the SWG VME. VME-related tasks, agenda items 4.1-4.4, will be addressed at this meeting. SAI-related tasks, agenda items 5.1-5.2, and any outstanding issues related to VME will be discussed at the 2nd SWG VME meeting.

Agenda Item 4. Discussion of four VME-related tasks

4.1. Address the discrepancy between common names and scientific names of VME indicator taxa in the CMMs (e.g., provide a table that translates between common and scientific names that can be updated as taxonomic changes are implemented)

4.1.1 Presentations by SWG VME participants and recommendations on a table that translates between common and scientific names that can be updated as taxonomic changes are implemented

Japan (Yumiko Osawa and Moto-omi Yamaguchi) presented a table that translates between common and scientific names of the VME indicator taxa. The table includes corals from the Emperor Seamounts (available on the Collaboration site under SWG VME). Japan explained recent taxonomic changes of the VME indicator taxa and that most families, except for families Corallidae and Alcyoniidae, can be categorized into either "gorgonians" or "soft corals" by common names. Japan suggested to include genera for families Corallidae and Alcyoniidae and families for others into the translation table of coral VME indicator taxa.

Canada will cross-reference the table with the species of corals in the eastern North Pacific Ocean. If needed, Canada will work with Japan to update the table. It will be circulated to SWG VME participants intersessionally and all SWG VME participants are encouraged to review the table in preparation for discussion during the 2nd SWG VME meeting.

4.2 Consider adding hydrocorals to the VME indicator taxa list

Japan (Mai Miyamoto) gave a presentation on hydrocoral occurrence in fisheries bycatch and research surveys in the Emperor Seamounts (available on the Collaboration site under SWG VME). The information was extracted from the meeting documents NPFC-2022-SSC BFME03-IP04 and NPFC2019-SSC VME04-WP02. Japan concluded that (1) no hydrocorals were caught by bottom fisheries, (2) there was a small occurrence of hydrocorals in survey samples (37 of 3,546 hauls), and (3) only small hydrocoral colonies were observed during visual surveys. Therefore, Japan suggested there is no evidence supporting the inclusion of hydrocorals in the NPFC's VME indicator taxa list.

Canada (Chris Rooper and Janelle Curtis) commented that in the eastern North Pacific, hydrocorals were observed in around 30% of visual transects on the Cobb-Eickelberg seamount chain and noted that the occurrence and density of hydrocorals were high in shallow parts (<220 metres) of Cobb Seamount. Canada also noted that there was no hydrocoral bycatch reported by sablefish pot fisheries and the distribution of hydrocorals does not generally overlap with that of its sablefish fishery.

Participants noted that the presented information from bottom fisheries indicates low vulnerability of hydrocorals in terms of retention and that currently there is no high risk of interaction of hydrocorals with fisheries. In case of expansion of the current fisheries, a fishery plan and assessment shall be developed and submitted to the Scientific Committee for review in accordance with the Exploratory Fishery Protocol.

The DSCC observer (Amy Baco-Taylor) pointed out that most hydrocorals are small (2-3 cm). They may be impacted by bottom fisheries, but this impact may not be observed.

Participants discussed the presented information and evaluated it against the criteria for VME identification (CMMs 2024-05 and 2024-06, Annex 2) and came to the decision not to recommend hydrocorals as a VME indicator taxon. However, Participants recognized that hydrocorals have some conservation concerns because of their reproductive life history, and in some cases because of low connectivity and high endemicity.

Some participants expressed a contrary opinion that hydrocorals should be included in the list of VME indicator taxa because of life-history traits that make them vulnerable.

4.2.1 If applicable, develop science-based encounter thresholds for hydrocorals
Not applicable.

4.3 Work toward completing objectives of VME data sharing
Canada (Chris Rooper) updated participants on the work toward completing objectives of VME data sharing. In SSC BFME03, terms of reference had been established to allow sharing of visual data on VME indicator taxa among Members. A data template was then developed by the SWG VME and in 2023 Members began sharing their data. Parallel to this process, a set of objectives for the data sharing was established:

- Objective 1. Use the data to learn where VME indicator taxa are known to be present and absent.
- Objective 2. Use the data to determine where there are elevated densities (hotspots) of VME indicator taxa.
- Objective 3. Use the data to update or develop models that predict the presence, absence or density of VME indicator taxa for further visual survey planning.

Objective 1 was accomplished, and VME distribution maps were uploaded on the Collaboration site (SWG VME). Canada encouraged participants to review the uploaded paper and provide feedback.

Canada will proceed with objective 2 and maybe objective 3 and report to the 2nd SWG VME meeting. Canada will reach out to individual Members who provided data for advice on how VME density had been estimated and how to use this data.

In response to the comments from Japan about the combined point and transect data and assumptions made for data from NOAA's Deep Sea Coral Research and Technology Program (DSCRTP), Canada agreed that it would be worthwhile to present point and transect data on separate maps and decided to remove "inferred absence" data of DSCRTP from its analysis.

Japan pointed out that Members had agreed to share VME data to address objectives 1 and 2 only. Using data for achieving objective 3 requires approval from data owners.

The FAO observer (Tony Thompson) informed participants that the Deep Sea Fisheries (DSF) project may support the NPFC in this work, i.e. organize a joint workshop with scientists and managers on species distribution models and their application to the management of VMEs.

4.4 Discuss methods for defining VMEs using other FAO criteria in addition to density-based criteria

The Lead reminded participants about the five criteria for identification of VMEs as defined in the International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO 2009) and CMMs 2024-05 and 2024-06. The NPFC endorsed two approaches for VME identification, one developed and applied by Canada and another one by Japan. Canada's approach is based on the density of VME indicator taxa. Japan's approach takes into account other criteria in addition to density, however, it is based on expert opinion and does not have quantitative criteria.

Participants noted that VME definitions based on density alone may overlook the other four VME criteria. They discussed the five criteria and made notes as follows:

1. Uniqueness or rarity
- VME is an ecosystem by definition. So this is a criterion which can be used on an exceptional basis.
- As an example, there are considerations of uniqueness or rarity in the working paper drafted by Japan in 2017 (NPFC-2017-SSC VME02-WP03(Rev 1), Appendix 1).

2. Functional significance of the habitat
- Sablefish are associated with sea pens. This was one of the reasons why sea pens were added to the list of VME indicator taxa.
- Sponges may provide carbon sequestration.

3. Fragility
- This is a trait to be defined through underwater observations.

4. Life history traits of component species that make recovery difficult
- This is relevant to slow-growing, long-lived species.
- There is a lack of life history information for many species.

5. Structural complexity

- Examples: Sea pens, despite being sparse, play a role in forming structural complexity. Also, some corals in the Mediterranean Sea and North Atlantic are thinly distributed and do not form an ecosystem but are important in terms of structural complexity.
- Species richness of VME taxa also plays a role in structural complexity.
- Change in species composition may significantly affect structural complexity.

Japan (Kota Sawada) made a general comment about differences in recovery time and fragility at the ecosystem level versus species level. For this reason, developing quantitative criteria is a challenging task which requires careful consideration.

Participants agreed on the need to pull together literature information on the life history of the VME indicator taxa. Canada will start compiling literature for species which commonly occur in the area and report at the next meeting.

Participants agreed to keep this agenda item open and revisit it at the next SWG VME meeting.

4.4.1. Presentation on compiled habitat suitability models for corals in the western half of the Convention Area

The observer from DSCC (Amy Baco-Taylor) gave a presentation on compiled habitat suitability models for corals in the western part of the Convention Area (available on the Collaboration site under SWG VME). Dr. Baco-Taylor concluded that (1) habitat suitability models (HSM) predict corals are widespread on all Northwestern Hawaiian Island (NWHI) and (Emperor Seamount Chain (ESC) seamounts, and (2) this is the case for four species of Scleractinia, the antipatharians, and all seven groups of octocorals. Thus, the observer suggested that the models predict not only the distributions of individual VME indicator taxa, but likely the widespread habitat suitability and distribution of whole coral communities and ecosystems.

The modelling outputs in the observer's presentation are from the following papers:
Yesson et al 2012: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2699.2011.02681.x
Yesson et al 2017:
https://www.sciencedirect.com/science/article/abs/pii/S096706451500435X
Tong et al 2023: https://www.frontiersin.org/articles/10.3389/fmars.2023.1217851/full

Participants noted the difference between the results of Japanese research surveys and the HSM results from the observer and emphasized the importance of validating HSMs using underwater visual observations and reporting a test statistic that summarizes the ability of an HSM to predict correctly.

Participants requested the observer to share her presentation and associated papers for review and agreed to continue this discussion at the next SWG meeting.

Japan reminded participants about the flowchart for VME identification (Annex 2.3, CMMs 2024-05 and 2024-06) and, in particular, the requirement to validate areas likely to be a VME through visual surveys.

The observer from FAO (Tony Thompson) introduced participants to the DSF project and partnership opportunities with NPFC (presentation is available on the Collaboration site under SWG VME). In particular, DSF project's output 2.3.2 *Identification of VMEs and understanding of gear-specific SAIs from bottom fisheries improved* is relevant to the work of SWG VME. Under this output, the project aims at quantifying SAI on VMEs (from fisheries) and monitoring VME status. Specific tasks include developing a plan to monitor and assess SAI, monitoring ecosystem health of VMEs, and detecting changes in abundance and biodiversity.

In response to the question about the level of involvement of NPFC, the observer clarified that this work will be undertaken by a consultant who will consult individual Members and compile the information. A one day meeting will then be organized with RFMOs. Finally, FAO will publish a report/FAO document.

Participants supported this initiative from the DSF project.

Agenda Item 5. Review of SAI-related tasks

5.1. Use data-based methods applied to Japan and Korea's indicator taxa bycatch to further refine encounter thresholds that are taxon and gear specific (higher priority)

Japan informed participants that it had started analysis and will try to complete it by the next SWG VME meeting. Korea will check data availability and report at the next meeting.

5.2. Continue to work to develop a synchronized approach for assessing and managing the risk of SAI and determine data requirements and spatial/temporal resolution for SAI assessment

Japan and Canada confirmed their plans to report on this topic at the next SWG VME meeting.

Agenda Item 6. Intersessional activities to address remaining SWG VME tasks

6.1. Selection of a second SWG VME meeting date to discuss remaining SWG VME tasks, specifically the SAI-related tasks in Agenda Item 5

Participants agreed to hold the 2nd SWG VME meeting on 27 September from 9am to 1pm, Tokyo time.

6.2. Discussion of intersessional activities to address outstanding SWG VME tasks

The Lead summarized intersessional activities to address SWG VME tasks as follows:

- Review the table updated by Canada and Japan that translates between common and scientific names of the coral VME indicator taxa
- Discuss data and analysis of Japanese and Korean bycatch data to develop encounter thresholds that are gear and taxon-specific
- Review Canada's paper on Objective 1 of the shared visual data for VME
- Talk more about if/how to use shared VME data to achieve Objective 3 (Use the data to update or develop models that predict the presence, absence or density of VME indicator taxa for further visual survey planning)
- Continue to discuss methods for defining VMEs using other FAO criteria in addition to density-based criteria
- Canada will start compiling literature on the life history of VME indicator taxa which commonly occur in the area and report at the next meeting.
- Review the HSM results and primary publications, as well as the presentation by Dr. Baco-Taylor
- Canada and Japan will correspond on developing a synchronized approach for assessing and managing the risk of SAI to VME

Agenda Item 7. Close of the Meeting

The meeting closed at 13:02pm on 20 June 2024, Tokyo time.