Recommendations for Conducting Impact Assessments of Bottom Fisheries in the NPFC Convention Area

Submission to the 6th meeting of the Small Scientific Committee on Bottom Fisheries and Marine Ecosystems (SSC BF-ME06) and the 10th meeting of the Scientific Committee (SC10) of the North Pacific Fisheries Commission

December 2025

Background

States individually and as members of Regional Fisheries Management Organizations (RFMOs) have committed to conducting Impact Assessments (IAs) to evaluate and demonstrate that bottom fisheries can be managed to prevent significant adverse impacts on Vulnerable Marine Ecosystems (VMEs) and associated deep-sea biodiversity and to ensuring the long-term sustainability of deep-sea fish stocks. These commitments are contained in a series of UN General Assembly (UNGA) resolutions and in the criteria established in the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO Guidelines). The Guidelines were endorsed by NPFC Members through the UNGA resolutions, beginning with the adoption of UNGA 64/72 in 2009, and incorporated into Annex 2 of CMM 2025-05. They serve as a blueprint for the implementation of the general obligations in Article 5 of the UN Fish Stocks Agreement (UNFSA) and Article 3 of the NPFC Convention text in respect of the management of deep-sea bottom fisheries.

The preambular language of the CMM 2025-05 was amended in 2024 to update the CMM to identify the additional commitments adopted by the UNGA since 2009, based on the reviews by the UNGA in 2011, 2016 and 2022 of the implementation of the bottom fisheries provisions of previous resolutions. The resolutions adopted as a result of these reviews – UNGA resolutions 66/68 (2011), 71/123 (2016) and 77/118 (2022) - call for additional actions, building upon the commitments made in the previous resolutions. Summaries of the additional commitments in these resolutions related to conducting IAs are provided below. NPFC Members have helpfully agreed to revise and update their impact assessments for bottom fisheries – a key commitment in UNGA resolutions beginning with UNGA 66/68 adopted in 2011.

The criteria for conducting impact assessments adopted by the NPFC are binding and contained in Annex 2 of both CMM 2025-05 and CMM 2025-06. Annex 2 incorporates the criteria in paragraph 47 of the FAO Guidelines for conducting IAs and, as stated in the introduction to Annex 2, "…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".

RECOMMENDATIONS FOR ADDTIONS OR AMENDMENTS TO THE TEMPLATE FOR IMPACT ASSESSMENTS

We recommend the following additions or amendments to the proposal for a "*Template for reports on identification of VMEs and assessment of impacts caused by individual fishing activities on VMEs or marine species*" in the Annex to the report of the 2nd meeting of the Small Working Group on VMEs in October 2025 (document NPFC-2025-SSC BFME06-RP02 SWG VME02). These amendments are based on relevant commitments in UNGA resolutions, including resolutions 66/68, 71/123 and 77/118 adopted since 2009, and related legal obligations contained in the UNFSA, UNCLOS the NPFC Convention and CMM 2025-05 and 2025-06. The paragraphs in the UNGA resolutions and legal obligations cited in the 'Basis for recommendation' below are included in the Annex to this document. All of the proposed additions or amendments below could be inserted or incorporated into paragraphs 10-13 of the Template proposed by the Small Working Group on VMEs:

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- ADD: "undertake a combination of mapping, predictive/habitat-suitability modeling, and species-distribution modeling in areas where bottom fishing is permitted, to identify areas where VMEs, including their associated and dependent species, and other marine species and deep-sea biodiversity occur or are likely to occur"

  Basis for recommendation: FAO Guidelines paragraph 47(iii); Annex 2.4 *Identification of potential VMEs* paragraph 1(b*) Assessment on whether a specific seamount that has been fished is a VME;* Annex 2.5(5) *Assessment of SAIs on VMEs or marine species* of CMM 2025-05 and CMM 2025-06; the addition of "including their associated and dependent species" from UNGA resolution 77/118, paragraphs 211, 212, 213(a) and 2023(c) (the latter explicitly endorsed by the May 2023 UNFSA resumed Review Conference in section A.13 of the outcome document (copied below))

- ADD: "collect baseline information on the ecosystems, habitats and communities in the fishing area, the spatial distribution and connectivity of VMEs, including their associated or dependent species, habitats and ecosystems, in order to assess potential impacts of bottom fisheries"

  Basis for recommendation: FAO Guidelines paragraph 47(ii); Annex 2.5(5) *Assessment of SAIs on VMEs or marine species* of CMM 2025-05 and CMM 2025-06, the addition of connectivity from UNGA resolution 77/118, paragraphs 212 and 216, and the addition of "the spatial distribution and connectivity of VMEs, including their associated and dependent species" from UNGA resolution 77/118, paragraphs 211, 212, 213(a) and 213(c) (the latter explicitly endorsed by the May 2023 UNFSA resumed Review Conference in section A.13 of the outcome document (copied below))

- ADD: "use the full set of criteria in Annex 2.3 *Definition of VMEs* of CMM 2025-05 and CMM 2025-06, including, for example, areas or habitats that harbor rare species; and 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"

  Basis for recommendation: Annex 2.3 *Definition of VMEs* of CMM 2025-05 and CMM 2025-06, UN FAO Guidelines paragraph 42, UNGA resolution 77/118, paragraph 213(b).

- ADD: "assess the impact of bottom fishing on VMEs, including their associated or dependent species, on species belonging to the same ecosystem or dependent upon or

associated with the target stocks, and low productivity fish species, other marine species and biodiversity beyond VMEs, including the cumulative historical impact of bottom fishing and prevent SAIs"

Basis for recommendation: FAO Guidelines paragraph 47; Annex 2.5(5) of CMM 2025-05 and CMM 2025-06; the addition of "including their associated and dependent species" from UNGA resolution 77/118, paragraphs 211, 212, 213(a) and 213(c); the addition of "on species belonging to the same ecosystem or dependent upon or associated with the target stocks" from Article 3(d) of the NPFC Convention text and Article 5(d) from the UNFSA; and the addition of "biodiversity beyond VMEs" from UNGA resolution 77/118 paragraph 211.

- ADD: "a risk assessment should recognize that in areas where VMEs, including their associated and dependent species, and species belonging to the same ecosystem or dependent upon or associated with the target stocks, are likely to occur, or to have occurred in the past, continued bottom fishing poses a risk to the recovery of these species and ecosystems should be considered an ongoing significant adverse impact"

  Basis for recommendation: FAO Guidelines paragraph 47; Annex 2.5(5) of CMM 2025-05 and CMM 2025-06; UNCLOS Article 119.1(b), UNFSA article 5(e), NPFC Convention article 3(d) which oblige Members to "adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks, with a view to **maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened**".

- ADD: "identify and protect areas where deep-water species and vulnerable marine ecosystems are likely to serve as refugia or better survive the impacts of climate change and ocean acidification, and establishing measures to support their resilience"

  Basis for recommendation: UNGA resolution 77/118 paragraph 218; NPFC Resolution on Climate Change.

- ADD: "apply the precautionary approach and reverse burden of proof in assessing the risk of SAIs: The impact assessment should demonstrate that bottom fisheries can be managed to prevent significant adverse impacts on VMEs, including their associated or dependent species, species belonging to the same ecosystem or dependent upon or associated with the target stocks, other marine species and biodiversity beyond VMEs. Members should be more cautious when information is uncertain, unreliable or inadequate and not use the absence of adequate scientific information as a reason for postponing or failing to take conservation and management measures"

  Basis for recommendation: FAO Guidelines paragraph 47; Annex 2.5(5) of CMM 2025-05 and CMM 2025-06; the addition of "including their associated and dependent species" from UNGA resolution 77/118, paragraphs 211, 212, 213(a) and 213(c); the addition of "on species belonging to the same ecosystem or dependent upon or associated with the target stocks" from Article 3(d) of the NPFC Convention text and Article 5(d) from the UNFSA; the addition of "biodiversity beyond VMEs" from UNGA resolution 77/118 paragraph 211; and the language on the application of the precautionary approach from NPFC Convention article 3(c) and UNFSA article 6.1 and 6.2.

The decision to revise and update bottom fisheries impact assessments presents an excellent opportunity for the NPFC to better incorporate the commitments made by Members through the UNGA resolutions adopted since 2009. The adoption of the above recommendations by the SSC

BF-ME and the Scientific Council would strengthen the NPFC's impact assessment process, making it more scientifically robust and ensuring good alignment with the commitments contained in the UNGA Sustainable Fisheries resolutions as reflected in the preambular language of CMM 2025-05, as well as the obligations under CMM 2025-05, the NPFC Convention text and the UN Fish Stocks Agreement.

ANNEX

Context and Legal Basis for proposed amendments to the Template for NPFC Impact Assessments

1. Preambular language of CMM 2025-05

The preambular language of CMM 2025-05: Conservation and management measure for bottom fisheries and protection of vulnerable marine ecosystems in the northwestern Pacific Ocean states as follows:

*"**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; paragraphs 113, 117 and 119 to 124 of resolution 64/72 in 2009, paragraphs 121, 126, 129, 130 and 132 to 134 of resolution 66/68 in 2011, paragraphs 156, 171, 175, 177 to 188 and 219 of resolution 71/123 in 2016 and paragraphs 181 and 203-219 of resolution 77/118 in 2022;*"

The Preambular language of CMM 2025-05 further states

*"**Recognizing** UNGA's calls to identify and overcome barriers to the implementation of the relevant paragraphs of General Assembly resolutions such as data availability, especially with regard to baseline data and the spatial distribution and connectivity of vulnerable marine ecosystems, including their associated and dependent species; periodically review and revise impact assessments whenever a substantial change in the fishery has occurred or there is relevant new information; and ensure that the precautionary approach is applied, including in the utilization of **impact assessments to inform management decisions and consideration of significant adverse impacts on vulnerable marine ecosystems, including their associated and dependent species**;"*

"*Recognizing that scientific literature indicates the likely occurrence of VMEs on most seamounts in the area and has documented significant adverse impacts to VMEs resulting from bottom fishing in the area, which reinforces the importance of regularly updating impact assessments and considering the adequacy of the existing management framework through the SC and the Commission;"*

2. United Nations General Assembly Resolutions

Amongst the paragraphs of the UNGA resolutions cited in the preambular language above relevant to conducting IAs are:

UNGA resolution 66/68 (2011)

Paragraph 129 of UNGA resolution 66/68 (2011) which calls on States and RFMOs to, *inter alia*:

- Strengthen procedures for carrying out impact assessments to take into account

individual, collective and cumulative impacts;

- Establish and improve procedures to ensure that impacts assessments are updated when new conditions or information so require;
- Establish and improve procedures for evaluating, reviewing and revising, on a regular basis, impact assessments based on best available science.

UNGA resolution 71/123 (2016)

Paragraphs 180-185 of UNGA resolution 71/123 (2016) call on States and RFMOs to, *inter alia*:

- Recognize the value of seabed mapping, benthic ecosystem modelling, comparative benthic studies, and predictive modelling amongst other tools to identify areas where VMEs are known or likely to occur;
- Ensure that impact assessments, including for cumulative impacts of activities covered by the assessment, are conducted consistently with the Guidelines, particularly paragraph 47 thereof, are reviewed periodically and are revised thereafter whenever a substantial change in the fishery has occurred or there is relevant new information;
- Emphasize the need to effectively implement paragraphs 42, 47 and 17-20 of the FAO Guidelines related to identifying VMEs, conducting impact assessments of bottom fisheries and assessing for significant adverse impacts;
- Take into account the potential impacts of climate change and ocean acidification in taking measures to manage deep sea fisheries and protect vulnerable marine ecosystems.

UNGA resolution 77/118 (2022)

Key paragraphs 211–219 verbatim which incorporate and build on the actions called for in resolutions 64/72, 66/68 and 71/123:

"211. **Recognizes the need for further progress with regard to obtaining more biological information on the species that comprise vulnerable marine ecosystems, including their associated and dependent species, the assessment of significant adverse impacts on vulnerable marine ecosystems, and protecting and conserving biodiversity, including beyond vulnerable marine ecosystems**, as well as the consistent application of the [FAO] Guidelines;

“212. Calls upon, in this regard, States, regional fisheries management organizations and arrangements and those States participating in negotiations to establish a regional fisheries management organization or arrangement competent to regulate bottom fisheries, **to identify and overcome barriers to the implementation of the relevant paragraphs of General Assembly resolutions 64/72, 66/68 and 71/123 such as data availability, especially with regard to baseline data and the spatial distribution and connectivity of vulnerable marine ecosystems, including their associated and dependent species, while recognizing the importance of international collaboration for this purpose, further recognizing that effective management of bottom fisheries is crucial to ensure the long-term sustainability of the sector;**

“213 (a) To use, as applicable, the full set of criteria in the [FAO] Guidelines to identify where

vulnerable marine ecosystems occur or are likely to occur, as well as for assessing significant adverse impacts on such ecosystems, **including their associated and dependent species**;

"213 (b) To ensure that **impact assessments, including for cumulative impacts of activities covered by the assessment, are conducted for all types of bottom-fishing activities consistent with the Guidelines, particularly paragraph 47 thereof, are reviewed periodically and are revised thereafter whenever a substantial change in the fishery has occurred or there is relevant new information, and that, where such impact assessments have not been undertaken, they are carried out as a priority before authorizing bottom-fishing activities;**

"213 **(c) To ensure that the precautionary approach is applied, including in the utilization of impact assessments to inform management decisions and consideration of significant adverse impacts on vulnerable marine ecosystems, including their associated and dependent species;**

"214. Recognizes that different types of marine scientific research, such as **seabed mapping, mapping of vulnerable marine ecosystems based on information from the fishing fleet, on-site camera observations from remote vehicles, benthic ecosystem modelling, comparative benthic studies and predictive modelling have resulted in the identification of areas where vulnerable marine ecosystems are known or are likely to occur** and in the adoption of conservation and management measures to prevent significant adverse impacts on such ecosystems, including the closure of areas to bottom fishing in accordance with paragraph 119 (b) of resolution 64/72;

"216. Encourages, in this regard, States, regional fisheries management organizations and arrangements with the competence to manage deep-sea fisheries, and States participating in negotiations to establish such organizations or arrangements to continue to improve the best available science, **carry out further marine scientific research to address the remaining knowledge gaps, in particular with regard to fish stock assessments to improve understanding of the connectivity of populations of deep-sea fish species** and to base and update conservation and management measures on the best available scientific information, in accordance with international law, as reflected in Part XIII of the Convention;

"218. Calls upon States, individually and through regional fisheries management organizations and arrangements, to take into account the potential impacts of climate change and ocean acidification in taking measures to manage deep-sea fisheries and protect vulnerable marine ecosystems, **including by identifying areas, based on scientific information, where deep-water species and vulnerable marine ecosystems are likely to better survive such impacts, and establishing measures to support their resilience**;

"219. Also calls upon States, individually and through regional fisheries management organizations and arrangements with the competence to regulate deep-sea fisheries, to **adopt conservation and management measures, including monitoring, control and surveillance measures, on the basis of the best available scientific information, including stock assessments, to improve the robustness of such measures, to ensure the long-term sustainability of deep-sea fish stocks and non-target species and the rebuilding of depleted stocks, consistent with the Guidelines and, where scientific information is uncertain, unreliable or inadequate, to ensure that conservation and management measures are established consistent with the precautionary approach, in particular with regard to vulnerable, threatened or endangered species;"**

3. UN Fish Stocks Agreement resumed Review Conference (May 2023)

Report of the resumed Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (A/CONF.210/2023/6)

Annex: Outcome of the resumed Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks

Recommendations:

A.13. **Conservation and management measures for deep-sea fisheries**

(a) Accelerate, where applicable, the establishment and **strengthen the implementation of long-term conservation and management measures for deep-sea fisheries and vulnerable marine ecosystems, including their associated and dependent species** in accordance with relevant General Assembly resolutions and the International Guidelines for the Management of Deep-Sea Fisheries in the High Seas of FAO;

4. NPFC CMM 2025-05 & CMM 2026-06

CMM 2025-05 & CMM 2026-06 establish requirements for conducting impact assessments, incorporating paragraph 47 of the FAO Guidelines as well as impacts on marine species, including the following:

Annex 2.5 "*Assessment of SAIs on VMEs or marine species"*

2.5(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:*

(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.

We would argue that the impact assessment process is inherently stepwise; without completing each stage in sequence, subsequent steps cannot be effectively carried out. In particular, without mapping or modeling the distribution of VMEs, including their associated and dependent species, the remainder of the impact assessment risks becoming a purely theoretical exercise.

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