



## Northwest Atlantic Fisheries Organization

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In all correspondence,  
please refer to:

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**Subject:** NAFO input to the 2022 General Assembly review on the impacts of bottom fishing

Further to your correspondence of 06 January 2022, please find enclosed the submission of the Northwest Atlantic Fisheries Organization (NAFO) to the upcoming review by the Assembly in 2022 of the implementation of the provisions of its resolutions relating to the impacts of bottom fishing on vulnerable marine ecosystems and the long-term sustainability of deep-sea fish stocks.

Yours sincerely,

Fred Kingston  
Executive Secretary

FK:ll

Enclosed: NAFO Submission (14 pgs.)

**Extract of:**

**Paragraphs 113, 117 and 119 to 124 of General Assembly resolution 64/72, Paragraphs 121, 126, 129, 130 and 132 to 134 of General Assembly resolution 66/68 and Paragraphs 156, 171, 175, 177 to 188 and 219 of General Assembly resolution 71/123**

**General Assembly resolution 64/72**

113. *Calls upon* States to take action immediately, individually and through regional fisheries management organizations and arrangements, and consistent with the precautionary approach and ecosystem approaches, to implement the 2008 International Guidelines for the Management of Deep-sea Fisheries in the High Seas of the Food and Agriculture Organization of the United Nations (“the Guidelines”)<sup>1</sup> in order to sustainably manage fish stocks and protect vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, from destructive fishing practices, recognizing the immense importance and value of deep sea ecosystems and the biodiversity they contain;

**NAFO Response:** Resolutions 61/105 and 64/72 identify RFMOs as key vehicles of high seas governance in the implementation of the commitments with respect to VMEs. The Northwest Atlantic Fisheries Organization (NAFO) has taken a number of measures to implement the Guidelines, including, *inter alia*, developing and implementing a precautionary approach and defining a list of habitat forming vulnerable marine ecosystem (VME) indicator species and indicator physical elements found in the NAFO Regulatory Area and closing areas ) to bottom fishing on seamounts and in other areas where these species are known or predicted to form significant concentrations

In 2022, NAFO expanded the boundaries of its existing seamount area closures, added six (6) new seamount closures, and extended the effectivity of the all seamount closures for another five (5) years. As a result, all seamount areas in the NAFO Regulatory Area at fishable depth (i.e. shallower than 4000 metres) are now closed to bottom contacting fishing gears until December 2026.

Also in 2022, NAFO reviewed the boundaries of its VME closures on the basis of new analysis by the Scientific Council. As a result, all of the existing closures were extended for another five years, and five (5) of these closed areas were increased in size. A further four (4) new VME closures were established for an interim period of two years pending further analysis by the scientific Council. In all, the areas closed to bottom fishing total 372,201 km<sup>2</sup>, representing 14% of the NAFO Regulatory Area. The expansion and extension of the area closures on seamounts and VMEs were based on the SAI analysis (see below).

NAFO has implemented its Precautionary Approach Framework since 2004 and at present, precautionary reference points are available for 14 of the 23 stocks managed by NAFO. NAFO is currently undertaking an in-depth review of the Precautionary Approach Framework which is expected to result in eventual determination of relevant reference points for all stocks.

117. *Also welcomes* the substantial work of the Food and Agriculture Organization of the United Nations related to the management of deep sea fisheries in the high seas and the protection of vulnerable marine ecosystems, in particular the development and adoption of the Guidelines, and urges States and regional fisheries management organizations or

arrangements to ensure that their actions in sustainably managing deep sea fisheries and implementing paragraphs 80 and 83 to 87 of resolution 61/105 and paragraphs 119, 120 and 122 to 124 of the present resolution are consistent with the Guidelines;

**NAFO Response:** NAFO has made efforts to ensure that the measures it has taken to promote sustainable fisheries and protection of ecosystems in the deep sea are consistent with the FAO Guidelines. For example, the Guidelines provide examples of species groups, communities and habitat-forming species that are documented as being considered sensitive and potentially vulnerable to fishing activities in the high-seas. In 2011, over 500 invertebrates caught in research vessel surveys in the NAFO Regulatory Area were reviewed against the Guidelines for identifying VMEs. In addition to the coral and sponge taxa that were previously recognized, three new groups emerged as potential indicators of VMEs: crinoids, erect bryozoans and large sea squirts. In addition, seamounts, canyon heads, spawning areas and knolls, which are listed in the FAO Guidelines and are included as VME elements, were identified.

All of the new VME indicators and elements were mapped, and these species are referenced specifically in a number of NAFO Scientific Council and Commission documents. The NAFO Coral, Sponge and Other Vulnerable Marine Ecosystem Indicator Identification Guide was developed to update the previous guide for identification of corals and sponges and to add the newly identified VME indicator species. The new guide was produced to improve reporting related to the implementation of the ecosystem approach in support of resolution 61/105, such as the development of the NAFO “fishing footprint”; the NAFO Coral, Sponge and Other Vulnerable Marine Ecosystem Indicator Identification Guide; and the development of closed areas to protect VME indicator species.

In 2021, the NAFO Scientific Council completed its second assessment of the risk of Significant Adverse Impacts (SAIs) from bottom fishing activities on VMEs in the NRA, before the additional new VME closures were agreed and implemented (see section 113). This reassessment took into account the six (6) SAI criteria set forth in paragraph 18 of the “Guidelines”.

Results indicated that small gorgonian, black coral, erect bryozoan and sea squirt VMEs have a high overall risk of SAI, whereas the large-sized sponges and large gorgonian coral VMEs have a low overall risk of SAI. The sea pen VME was assessed as having an intermediate risk of SAI. Since completing this analysis, NAFO has taken steps to increase the area closed to bottom fishing for the protection of VMEs (see section 113). As a result of implementing the new protection measures, the SAI status of sea pen and black coral VMEs have improved, and in particular black coral is now assessed as having a low risk of SAI.

119. *Considers* that, on the basis of the review carried out in accordance with paragraph 91 of resolution 61/105, further actions in accordance with the precautionary approach, ecosystem approaches and international law are needed to strengthen the implementation of paragraphs 80 and 83 to 87 of resolution 61/105, and in this regard calls upon regional fisheries management organizations or arrangements with the competence to regulate bottom fisheries, States participating in negotiations to establish such organizations or arrangements, and flag States to take the following urgent actions in areas beyond national jurisdiction:

- (a) Conduct the assessments called for in paragraph 83 (a) of resolution 61/105, consistent with the Guidelines, and ensure that vessels do not engage in bottom fishing until such assessments have been carried out;
- (b) Conduct further marine scientific research and use the best scientific and technical information available to identify where vulnerable marine ecosystems are known to occur or are likely to occur and adopt conservation and management measures to prevent significant adverse impacts on such ecosystems consistent with the Guidelines, or close such areas to bottom fishing until conservation and management measures have been established, as called for in paragraph 83 (c) of resolution 61/105;
- (c) Establish and implement appropriate protocols for the implementation of paragraph 83 (d) of resolution 61/105, including definitions of what constitutes evidence of an encounter with a vulnerable marine ecosystem, in particular threshold levels and indicator species, based on the best available scientific information and consistent with the Guidelines, and taking into account any other conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems, including those based on the results of assessments carried out pursuant to paragraph 83 (a) of resolution 61/105 and paragraph 119 (a) of the present resolution;
- (d) Adopt conservation and management measures, including monitoring, control and surveillance measures, on the basis of stock assessments and the best available scientific information, 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, ensure that conservation and management measures are established consistent with the precautionary approach, including measures to ensure that fishing effort, fishing capacity and catch limits, as appropriate, are at levels commensurate with the long-term sustainability of such stocks;

**NAFO Response:** Two of the general principles of the NAFO Convention are to take due account of the impact of fishing activities on other species and marine ecosystems and in doing so, adopt measures to minimize harmful impact on living resources and marine ecosystems, and to take due account of the need to preserve marine biological diversity. In this context NAFO has taken steps to identify and close bottom fishing areas where bottom fishing activities would cause significant adverse impacts on vulnerable marine ecosystems. To mitigate the likelihood of encounters outside of these areas, NAFO has also established thresholds for significant encounters, on the basis of scientific assessments inside the fishing footprint and on adjacent continental slopes, at 7 kg per haul for sea pens, 60 kg for other live coral and 300 kg for sponges as catch per set. Catches in excess of these amounts trigger a “move-on rule”, requiring a vessel to move two nautical miles before recommencing fishing operations, and to inform their national administrations of the encounter, who then pass the information to the Secretariat, and thence to Scientific Council. The measures adopted by NAFO can be found in Articles 15-24 of the [NAFO Conservation and Enforcement Measures](#).

Another general principle of the NAFO Convention is to apply the precautionary approach in accordance with Article 6 of the 1995 UN Fish Stocks Agreement. Since 2004, NAFO has established management measures for fishing opportunities taking into consideration its Precautionary Approach Framework (NAFO FC Doc. 04/18).

The NAFO Precautionary Approach Framework (PAF) is currently under review and revision.

120. *Calls upon* flag States, members of regional fisheries management organizations or arrangements with the competence to regulate bottom fisheries and States participating in negotiations to establish such organizations or arrangements to adopt and implement measures in accordance with paragraphs 83, 85 and 86 of resolution 61/105, paragraph 119 of the present resolution, and international law, and consistent with the Guidelines, and not to authorize bottom fishing activities until such measures have been adopted and implemented;

**NAFO Response:** NAFO has implemented measures in accordance with paragraphs 83, 85 and 86 of resolution 61/105, paragraph 119 of the present resolution, and international law, and consistent with the Guidelines, as outlined in paragraphs above.

121. *Recognizes* the special circumstances and requirements of developing States and the specific challenges they may face in giving full effect to certain technical aspects of the Guidelines, and that implementation by such States of paragraphs 83 to 87 of resolution 61/105, paragraph 119 of the present resolution and the Guidelines should proceed in a manner that gives full consideration to section 6 of the Guidelines on special requirements of developing countries;

**NAFO Response:** N/A

122. *Calls upon* States and regional fisheries management organizations or arrangements to enhance efforts to cooperate to collect and exchange scientific and technical data and information related to the implementation of the measures called for in the relevant paragraphs of resolution 61/105 and the present resolution to manage deep sea fisheries in areas beyond national jurisdiction and to protect vulnerable marine ecosystems from significant adverse impacts of bottom fishing by, inter alia:
- (a) Exchanging best practices and developing, where appropriate, regional standards for use by States engaged in bottom fisheries in areas beyond national jurisdiction and regional fisheries management organizations or arrangements with a view to examining current scientific and technical protocols and promoting consistent implementation of best practices across fisheries and regions, including assistance to developing States in accomplishing these objectives;
  - (b) Making publicly available, consistent with domestic law, assessments of whether individual bottom fishing activities would have significant adverse impacts on vulnerable marine ecosystems and the measures adopted in accordance with paragraphs 83, 85 and 86, as appropriate, of resolution 61/105, and promoting the inclusion of this information on the websites of regional fisheries management organizations or arrangements;
  - (c) Submission by flag States to the Food and Agriculture Organization of the United Nations of a list of those vessels flying their flag authorized to conduct bottom fisheries in areas beyond national jurisdiction, and the measures they have adopted to give effect to the relevant paragraphs of resolution 61/105 and the present resolution;
  - (d) Sharing information on vessels that are engaged in bottom fishing operations in areas

beyond national jurisdiction where the flag State responsible for such vessels cannot be determined;

**NAFO Response:** NAFO participates in regular exchanges and international fora, mediated through the FAO or bilaterally with other RFMOs, to develop and implement best practices.

All assessments of the extent of VMEs in the NAFO Regulatory Area and the assessments of any impacts of fishing activity on them are publicly available via the NAFO website and the FAO VME Database.

NAFO and the International Council for the Exploration of the Seas (ICES) are collaborating partners in the Working Group on Deep-water Ecology (WG-DEC) and the NAFO/ICES *Pandalus* Assessment Group (NIPAG), a working group performing stock assessment of shrimps in North Atlantic and providing scientific advice.

In 2021, NAFO became a partner in the Global Environmental Facility (GEF) project “*Deep Sea Fisheries under Ecosystem Approach*” managed by the United Nations Food and Agriculture Organization (FAO) (*ABNJ Deep Sea Fisheries Project*).

The Contracting Parties are required to provide a list of vessels entitled to fly its flag which it may authorize to conduct fishing activities in the Regulatory Area to the NAFO Secretariat. This list is on the NAFO website. NAFO also maintains a list of vessels linked to IUU fishing on its website, and exchanges details of these with other RFMOs.

123. *Encourages* States and regional fisheries management organizations or arrangements to develop or strengthen data collection standards, procedures and protocols and research programmes for identification of vulnerable marine ecosystems, assessment of impacts on such ecosystems, and assessment of fishing activities on target and non-target species, consistent with the Guidelines and in accordance with the Convention, including Part XIII thereof;

**NAFO Response:** NAFO has strengthened its data collection procedures for VME indicator species by publishing field guides to deep water sponges, corals and other taxa found in the NAFO Regulatory Area (the above-mentioned NAFO Coral, Sponge, and Other Vulnerable Marine Ecosystem Indicator Identification Guide). Measures have been adopted requiring all catches of VME indicator species to be recorded at the lowest taxonomic level possible by observers, and to facilitate this, the Secretariat have forwarded to FAO a list of VME indicator species which currently lack ASFIS codes for inclusion in the FAO species list.

All scientific surveys conducted in the NAFO Regulatory Area (NRA) routinely collect information on all benthic species encountered, and these data have been used by scientific Council to define and map VMEs in the NRA and to monitor adverse impacts from fisheries.

124. *Calls upon* relevant States to cooperate and make efforts to establish, as appropriate, regional fisheries management organizations or arrangements competent to regulate



bottom fisheries in areas beyond national jurisdiction where there are no such organizations or arrangements;

**NAFO Response:** NAFO has competency over most fisheries occurring in the waters of the northwest Atlantic Ocean beyond national jurisdiction, the so-called NAFO Regulatory Area.

**General Assembly resolution 66/68**

121. *Calls upon* States to take action immediately, individually and through regional fisheries management organizations and arrangements, and consistent with the precautionary approach and ecosystem approaches, to continue implementing the 2008 International Guidelines for the Management of Deep-Sea Fisheries in the High Seas of the Food and Agriculture Organization of the United Nations (“the Guidelines”) in order to sustainably manage fish stocks and protect vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, from destructive fishing practices, recognizing the immense importance and value of deep-sea ecosystems and the biodiversity they contain;

**NAFO Response:** The Guidelines have served to frame the discussions on protection of vulnerable marine ecosystems (VMEs) under NAFO’s management. NAFO has developed tools to protect VMEs, including closing areas to bottom fishing in order to protect indicator species of vulnerable marine ecosystems, such as corals and sponges. NAFO has implemented a framework for applying the precautionary approach to fisheries management and is developing risk-based management approaches for a number of stocks.

This is detailed in our response to paragraphs 113 and 117 of UNGA resolution 64/72 (above).

126. *Also welcomes* the substantial ongoing work of the Food and Agriculture Organization of the United Nations related to the management of deep-sea fisheries in the high seas and the protection of vulnerable marine ecosystems, and urges States and regional fisheries management organizations and arrangements to ensure that their actions in sustainably managing deep-sea fisheries and implementing paragraphs 80 and 83 to 87 of resolution 61/105 and paragraphs 119, 120 and 122 to 124 of resolution 64/72 are consistent with the Guidelines;

**NAFO Response:** See response to paragraph 117 of UNGA resolution 64/72 (above).

129. *Considers*, on the basis of the review carried out in accordance with paragraph 129 of resolution 64/72, that despite the progress made, the urgent actions called for in the relevant paragraphs of resolutions 61/105 and 64/72 have not been fully implemented in all cases, and in this regard further actions in accordance with the precautionary approach, ecosystem approaches and international law and consistent with the Guidelines are needed to strengthen the continued implementation, and in this regard calls upon States, through regional fisheries management organizations and arrangements with the competence to regulate bottom fisheries, States participating in negotiations to establish such organizations or arrangements and flag States to take the following urgent actions regarding bottom fishing in areas beyond national jurisdiction:

- (a) To strengthen procedures for carrying out assessments to take into account individual, collective and cumulative impacts, and for making the assessments publicly available, recognizing that doing so can support transparency and capacity-building globally;
- (b) To establish and improve procedures to ensure that assessments are updated when new conditions or information so require;
- (c) To establish and improve procedures for evaluating, reviewing and revising, on a regular basis, assessments based on best available science and management measures;
- (d) To establish mechanisms to promote and enhance compliance with applicable measures related to the protection of vulnerable marine ecosystems, adopted in accordance with international law;

**NAFO Response:** Since their implementation in 2008, NAFO has established a process for reviewing its measures for the protection of VMEs, allowing refinement of its management measures on the basis of the most up to date scientific information. This ongoing review forms one component of NAFO's ecosystem approach framework for fisheries management, ensuring that assessments are undertaken on a regular basis, and that all reports and documents are publicly available. Specifically, Article 24 of its Conservation and Enforcement Measures requires NAFO to review its VME measures in 2022.

Under Article 23 of its Conservation and Enforcement Measures, NAFO is committed to conduct a reassessment of bottom fishing activities every 5 years, or when there is new scientific information indicating a VME in a given area, other new scientific information, or there is significant change in the fishery. The last such assessment was conducted in 2021 and the full results are publicly available in the June 2021 report of the Scientific Council.

130. *Notes* that not all impact assessments have been made publicly available, and calls upon States, consistent with domestic law, and regional fisheries management organizations and arrangements to publish all assessments without delay;

**NAFO Response:** NAFO publishes all its assessments of VME habitats on its website and in its Scientific Council Reports and Research Documents.

132. *Encourages*, in this regard, regional fisheries management organizations and arrangements with the competence to manage bottom fisheries, States participating in negotiations to establish such organizations or arrangements and flag States to consider the results available from marine scientific research, including those obtained from seabed mapping programmes concerning the identification of areas containing vulnerable marine ecosystems, and to adopt conservation and management measures to prevent significant adverse impacts from bottom fishing on such ecosystems, consistent with the Guidelines, or to close such areas to bottom fishing until such conservation and management measures are adopted, as well as to continue to undertake further marine scientific research, for the above-mentioned purposes, in accordance with international law as reflected in Part XIII of the Convention;



**NAFO Response:** As detailed in our response in UNGA resolution 64/72, paragraph 119 (above), two of the general principles of the NAFO Convention are to take due account of the impact of fishing activities on other species and marine ecosystems and in doing so, adopt measures to minimize harmful impact on living resources and marine ecosystems, and to take due account of the need to preserve marine biological diversity. In this context, NAFO has adopted a cycle of advice, review and implementation of its management measures to ensure the ecosystem approach is always considered when fisheries management decisions are taken. NAFO's Scientific Council and Commission have developed an ecosystem approach roadmap which provides a framework to assess and mitigate significant adverse impacts.

133. *Encourages* States, regional fisheries management organizations and arrangements and States participating in negotiations to establish such organizations or arrangements to undertake further research on deep-sea species and ecosystems and assessments of fishing activities on target and non-target species, consistent with the Guidelines and in accordance with the Convention, including Part XIII of the Convention;

**NAFO Response:** NAFO has facilitated research on deep-sea species and ecosystems through the exchange of information and data in its scientific fora, through coordinating funding of relevant research and furthering the assessment of fishing activities through the analysis of Vessel Monitoring System (VMS) data by the Secretariat in support of scientific activities. The EU-funded NEREIDA project, still ongoing since 2009, represents a major multidisciplinary research effort on the sensitive habitats and fishing activities in the Northwest Atlantic, as well as an in-depth analysis of the impacts of fishing on vulnerable marine ecosystems.

Scientific Council has established a Working Group on Ecosystem Science (WG-ESA) and Assessment which meets annually to conduct research on deep sea ecosystems. The results of this work are used to formulate Scientific Council's advice, which is further developed by the Working Group on the Ecosystem approach to fisheries Management (WG-EAFFM) to propose management actions for the consideration of the Commission.

134. *Recognizes in particular* the special circumstances and requirements of developing States and the specific challenges they may face in giving full effect to certain technical aspects of the Guidelines, and that implementation by such States of paragraphs 83 to 87 of resolution 61/105, paragraph 119 of resolution 64/72, paragraph 129 of the present resolution and the Guidelines should proceed in a manner that gives full consideration to section 6 of the Guidelines on special requirements of developing countries;

**NAFO Response:** N/A

**General Assembly resolution 71/123**

156. Invites States and regional fisheries management organizations and arrangements with competence to manage deep-sea fisheries to share experiences and good practices, for example by considering organizing joint meetings, where appropriate;

**NAFO Response:** NAFO cooperates with other organizations, including other fishery organizations, ICES and UN bodies. NAFO participates in the Regional Fishery Body Secretariats Network that facilitates the ongoing information exchange among RFB secretariats. NAFO is a partner to the GEF funded ABNJ Deep Seas Fisheries project that aims to improve the implementation of policy and legal frameworks for sustainable fisheries and biodiversity conservation in the ABNJ. NAFO contributes to the project specifically by sharing knowledge and experience with other RFMO/As.

The Joint Advisory Group on Data Management (JAGDM) is a technical experts group that provide advice on technical issues and promotes harmonization and standardization of fisheries data management and communications primarily between NAFO and North East Atlantic Fisheries Organization (NEAFC).

NAFO and ICES have established joint working groups, such as the working group on deep-water ecology and the *Pandalus* assessment working group. NAFO, ICES and NAMMCO participate in a joint working group on harp and hooded seals.

In recent years, NAFO has invited a number of experts from other organizations to participate as external peer-reviewers in Scientific Council meetings and its working groups, and to review specific bodies of Scientific work such as multi-specific models used in the NAFO Ecosystem Roadmap.

171. Calls upon States to take action immediately, individually and through regional fisheries management organizations and arrangements, and consistent with the precautionary approach and ecosystem approaches, to continue to implement the 2008 International Guidelines for the Management of Deep-sea Fisheries in the High Seas of the Food and Agriculture Organization of the United Nations (the Guidelines) in order to sustainably manage fish stocks and protect vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, from fishing practices with significant adverse impacts on vulnerable marine ecosystems, recognizing the immense importance and value of deep-sea ecosystems and the biodiversity they contain as documented in the First Global Integrated Marine Assessment;

**NAFO Response:** This is detailed in our response to paragraphs 113 and 117 of UNGA Resolution 64/72 and 121 in UNGA resolution 66/68 (above).

175. Urges States and regional fisheries management organizations and arrangements to ensure that their actions in sustainably managing deep-sea fisheries and implementing paragraphs 80 and 83 to 87 of resolution 61/105, paragraphs 113 and 119 to 124 of resolution 64/72 and paragraphs 121, 129, 130 and 132 to 134 of resolution 66/68 are consistent with the Guidelines;

**NAFO Response:** This is detailed in our response to paragraph 117 in UNGA resolution 64/72 (above).

177. Notes in this regard the adoption by coastal States of conservation measures regarding their continental shelf to address the impacts of bottom fishing on vulnerable marine ecosystems, as well as their efforts to ensure compliance with those measures;

**NAFO Response:** N/A

178. Reiterates the importance of marine scientific research for the sustainable management of deep-sea fishery resources, including target fish stocks and non-target species, and to protect the marine ecosystem including, inter alia, the prevention of significant adverse impacts on vulnerable marine ecosystems;

**NAFO Response:** NAFO Contracting Parties continue to collaborate, including through the Scientific Council, to improve understanding and knowledge of the oceans and the deep sea, including, in particular, the extent and vulnerability of deep-sea biodiversity and ecosystems, by increasing their marine scientific research activities.

NAFO manages 20 fish stocks based on scientific research and the precautionary approach.

NAFO has identified areas as being vulnerable to bottom contact gears and have closed these areas to bottom fishing. As reflected in Article 17 of the NAFO CEM, no vessel can shall engage in bottom fishing in these areas. In 2009, NAFO published a Coral Identification Guide to help those on-board commercial and research fishing vessels to identify and record the various species of coral likely to be commonly encountered in fishing trawls. In 2010, this was followed by a Sponge Identification Guide. In 2015, NAFO published the Coral, Sponge and Other Vulnerable Marine Ecosystem Indicator Guide. The working group on the Ecosystem Science and Assessment (WG-ESA) works on identifying benthic habitats subject to significant adverse impacts and in need of protection. NAFO has introduced encounter thresholds with sponges and corals, and lists of VME species to the NAFO CEMs, which was updated in 2021.

The 2021 bottom fisheries re-assessment and the SAI of fishing on VMEs have been mentioned in the response above. In conducting the analyses, NAFO has developed methods for the assessment of SAI in the preparation of the 2021 re-assessment, including the analysis of VME functions, assessing the connectivity between VME closures, modelling the resilience of VME indicator species and determining fishery specific overlaps between VMEs and bottom trawling using the actual area of seabed fished through detailed haul by haul fishing effort data.

179. Welcomes the important progress made by 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 implement paragraphs 80 and 83 to 87 of resolution 61/105, paragraphs 113, 117 and 119 to 124 of resolution 64/72 and paragraphs 121, 126, 129, 130 and 132 to 134 of resolution 66/68 and address the impacts of bottom fishing on vulnerable marine ecosystems, but notes with concern the uneven implementation of those provisions and that, in particular, bottom fishing continues to occur in certain areas beyond national jurisdiction without an impact assessment having been completed in the 10 years since the adoption of resolution 61/105, in

which the General Assembly called for such assessments to be undertaken by 31 December 2008;

**NAFO Response:** The Scientific Council identifies and maps VMEs based on the best available scientific information. NAFO is committed to conducting a reassessment of bottom fishing activities every 5 years, or when new scientific information indicating a VME in a given area, and take the necessary actions to protect the VME. The most recent assessment was in 2021.

See also response to paragraph 178 of UNGA Resolution 71/123 (above).

180. Calls upon, in this regard, States, regional fisheries management organizations and arrangements with the competence to regulate deep-sea fisheries, and States participating in negotiations to establish such organizations or Sustainable fisheries, including through the 1995 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, and related instruments A/RES/71/123 33/40 arrangements to take, in particular, the following urgent actions regarding bottom fishing in areas beyond national jurisdiction:
- (a) To use, as applicable, the full set of criteria in the Guidelines to identify where vulnerable marine ecosystems occur or are likely to occur as well as for assessing significant adverse impacts;
  - (b) To ensure that impact assessments, including for cumulative impacts of activities covered by the assessment, are conducted 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;
  - (c) To ensure that conservation and management measures adopted by States and regional fisheries organizations and arrangements are based on and updated on the basis of the best available scientific information, noting in particular the need to improve effective implementation of thresholds and move-on rules;

**NAFO Response:** NAFO's Scientific Council has applied the Guidelines in defining VMEs and mapping their distribution.

NAFO conducts bottom fishing reassessments every 5 years consistent with the Guidelines, whether or not there has been a substantial change in the fishery. If there has been a substantial change it can be reviewed by a number of NAFO bodies that meet annually. Article 23 of the NAFO Conservation and Enforcement Measures (CEM) states that the Scientific Council is tasked with identifying VMEs and providing the Executive Secretary with the data for circulation to Contracting Parties, and Annex I.E V of the CEM provides a list of what the assessment should address.

Article 22 of the NAFO CEM establishes encounter thresholds for VME indicator species and obliges a vessel to move a minimum of 2 nautical miles from the previous tow when any of these thresholds are exceeded.

NAFO response: This is detailed in our response to paragraphs 113 and 117 of UNGA Resolution 64/72 and 121 in UNGA resolution 66/68 (above).

181. Recognizes that different types of marine scientific research, such as, *inter alia*, 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 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;

**NAFO Response:** NAFO Contracting Parties use, *inter alia*, on-site camera observations, scientific trawl survey etc., to identify VMEs. Scientific council has mapped VME distribution on the basis of research survey records using Kernel Density Analysis. This is further supplemented with information from species distribution modeling.

182. Encourages, in this regard, States, regional fisheries management organizations and arrangements with the competence to manage bottom fisheries, and States participating in negotiations to establish such organizations or arrangements, to consider the results available from different types of marine scientific research, including, as appropriate, those listed in paragraph 181 above, concerning the identification of areas containing vulnerable marine ecosystems, and to adopt conservation and management measures to prevent significant adverse impacts from bottom fishing on such ecosystems, consistent with the Guidelines, or to close such areas to bottom fishing until such conservation and management measures are adopted, as well as to continue to undertake further marine scientific research, for the above-mentioned purposes, in accordance with international law, as reflected in Part XIII of the Convention;

**NAFO Response:** NAFO has made efforts to ensure that the measures it has taken to promote sustainable fisheries and protection of ecosystems in the deep sea are consistent with the Guidelines. NAFO is implementing an Ecosystem Approach to fisheries management and adopted a Precautionary Approach Framework (PAF) to guide fisheries management decision making, which is now being revised.

183. 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 carry out further marine scientific research to address the remaining knowledge gaps, in particular with regard to fish stock assessments, 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;

**NAFO Response:** The Contracting Parties conduct surveys and other marine scientific research, and the results are then fed into the work of the NAFO Scientific Council.

184. Notes with concern that vulnerable marine ecosystems may also be impacted by human activities other than bottom fishing, and encourages in this regard States and competent international organizations to consider taking action to address such impacts; A/RES/71/123 Sustainable fisheries, including through the 1995 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, and related instruments 34/40

**NAFO Response:** NAFO has noted that there are a number of non-fishing activities occurring in the Regulatory Area that have the potential to impact fisheries resources and the ecosystem. In this context, non-fishing activities, e.g. oil and gas activities, continue to be in the NAFO Commission agenda during its Annual Meetings. In 2021, the Commission requested the Secretariat and the Scientific Council with other international organizations, such as FAO and ICES to inform the Scientific Council's work related to the potential impact of activities other than fishing.

The NAFO Secretariat has also been mandated to conduct outreach with other international organizations to ensure that NAFO's efforts to protect marine biodiversity are known. NAFO and a coastal State have also established an arrangement to exchange information concerning fisheries and oil and gas activities in the NAFO Regulatory Area.

185. 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;

**NAFO Response:** NAFO Scientific Council has developed the template for ecosystem summary sheets (ESS), which is intended to communicate advice to the Commission on, *inter alia*, changes in the marine environment and ecosystem productivity.

186. 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 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;

**NAFO Response:** The NAFO Precautionary Approach Framework (PAF) provides the basis for scientific advice and management of fisheries in the NAFO Regulatory Area. The PAF also takes the population and ecosystem dynamics, life history of species, and external factors that affect natural resources into consideration. The NAFO Precautionary Approach Framework is currently being revised.

NAFO is developing an Ecosystem Approach to Fisheries Management. The Working Group on the Ecosystem Science and Assessment (WG-ESA) works on identifying and delineating benthic habitats subject to significant adverse impacts and in need of



protection. In addition, the NAFO joint Scientific Council and Commission Working Group on the Ecosystem Approach Framework to Fisheries Management (WG-EAFFM) provides advice on the introduction has introduced closed areas, exploratory fishing protocols, encounter thresholds with sponges and corals, and a list of VME indicator species to the NAFO CEM.

The NAFO Action Plan in management and minimization of bycatch and discards aims to improve the selectivity in the fisheries of the NAFO Regulatory Area, the accurate reporting of the catch, management measures to reflect the Precautionary and Ecosystem approaches to fisheries management and to identify priority areas for by-catch management.

187. Recognizes, in particular, the special circumstances and requirements of developing States and the specific challenges they may face in giving full effect to certain technical aspects of the Guidelines, and that implementation by such States of paragraphs 83 to 87 of resolution 61/105, paragraph 119 of resolution 64/72, paragraph 129 of resolution 66/68 and paragraph 180 of the present resolution and the Guidelines should proceed in a manner that gives full consideration to section 6 of the Guidelines on the special requirements of developing countries;

**NAFO Response:** N/A

188. Recognizes the need to enhance the capacity of developing States, including with regard to stock assessments, impact assessments, scientific and technical knowledge and training, and encourages States to provide technical and financial support to developing countries to and financial support to developing countries to address their special requirements and challenges in implementing the Guidelines;

**NAFO Response:** NAFO participates in, and makes in-kind contributions, to FAO initiatives, such as the Fisheries Resources Monitoring System (FIRMS), the ABNJ Deep-sea Fisheries project and Aquatic Sciences and Fisheries Abstracts (ASFA), Coordinating Working Party on Fisheries Statistics of FAO (CWP) and the EU funded NEREIDA project. NAFO has also provided technical assistance and training to more recently established RFMOs.

219. Encourages States, regional fisheries management organizations and arrangements and other relevant bodies to assist developing States in the implementation of the actions called for in paragraphs 80 and 83 to 87 of resolution 61/105, paragraphs 113, 117 and 119 to 124 of resolution 64/72 and paragraphs 121, 126, 129, 130 and 132 to 134 of resolution 66/68, and paragraphs 156, 171, 175 and 177 to 188 of the present resolution;

**NAFO Response:** N/A