

United States Bottom Fishing Review Submission April 2022

The United States, at its highest levels of government, recognizes that the effects of destructive fishing practices on vulnerable marine ecosystems (VMEs) in all parts of the ocean are a serious problem. In that regard, the United States has taken action both within areas under its national jurisdiction and areas beyond national jurisdiction to give effect to the relevant UNGA Resolutions 64/72, 66/68, and 71/123. These actions are detailed below, reflecting both domestic and international progress, focusing on those actions taken by the United States since our response to UNGA Resolution Res 70/75 submitted in April 2016.

The United States notes the substantial progress made by States, individually and at the regional and global levels, to implement the relevant provisions of UNGA Resolutions 61/105, 64/72, 66/68, and 71/123. In our view, these UNGA Resolutions and the provisions of the FAO Guidelines, if fully implemented, provide tools to protect VMEs from significant adverse impacts from destructive fishing practices and ensure the long term sustainability of deep sea fish stocks. We further note, with pleasure, that implementation of these commitments has progressed significantly in those regions where it had been lacking in the last bottom fishing review. Additionally, since 2016, scientific understanding of the functionality of VMEs and their relationship to supporting healthy fisheries has dramatically improved, and this scientific progress should be reflected in the development of recommendations for the review process. We look forward to a robust review of these matters at the UNGA in November 2022 and, in particular, to the two-day workshop being convened by the Secretary General that will contribute to this review. The United States is prepared to work with States at the UN and elsewhere to ensure the objectives and provisions of UNGA Resolutions 61/105, 64/72, 66/88, and 71/123 are fully met.

Implementation of the Deep-Sea Fisheries Guidelines

The United States has been working 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 in order to sustainably manage fish stocks and protect vulnerable marine ecosystems, both through actions taken individually and in cooperation with other countries in RFMO/As in which the United States is a member or participant, as reflected below.

The United States is pleased to support the FAO's continued efforts to assist States and RFMOs in their implementation of the Guidelines. The United States, through the National Oceanic and Atmospheric Administration (NOAA), collaborates with the FAO and other partners on this work through the Common Ocean's initiative, specifically the Sustainable Fisheries Management and Biodiversity Conservation of Deep-sea Ecosystems in the Areas Beyond National Jurisdiction (ABNJ) project. This project has assisted governments and industry in the North Pacific and the Indian Ocean to more fully implement the requirements of the relevant UNGA resolutions, as well as supported scientific advancements, including novel work on the importance of sponge communities to the overall functioning of benthic environments and their impact to mitigate climate changes in the deep ocean.

Coastal State Implementation

Since 2015, the United States has taken important actions within our EEZ to reduce the risk of significant adverse effects from deep-sea fishing to vulnerable benthic habitats (equivalent to VMEs in areas beyond national jurisdiction). These actions include the following area-based management measures:

- In 2016, the Papahānaumokuākea Marine National Monument was expanded to include additional deepwater areas. The total area protected (1,508,870 km²), makes this monument the

largest MPA in the United States. The monument's seamounts include many VME resources with population connectivity and similar habitat to those outside the U.S. EEZ in the region of the North Pacific Fisheries Commission.

- Also in 2016, President Obama established the Northeast Canyons and Seamounts Marine National Monument. With the exception of a small red crab fishery, the monument prohibits all bottom-contact fishing gear within its area. While commercial fishing restrictions within the monument were briefly suspended in 2020, President Biden re-established these protections in October 2021. The red crab pot fishery is scheduled to be phased out in 2023. The New England Seamounts in the monument are a portion of a longer chain extending into the Northwest Atlantic Fisheries Organization (NAFO) area. Genetic studies have confirmed population connectivity of VME indicator species (cold-water corals) inside and outside the U.S. EEZ and NAFO has protected these areas as VMEs.
- In 2017, NOAA established the Frank R. Lautenberg Deep-Sea Coral Protection Area, the largest MPA in the U.S. Atlantic. The area encompasses areas of known or highly likely coral presence in underwater canyons or slope areas along the continental shelf edge, as well as a precautionary closure of deeper areas out to the edge of the U.S. EEZ. Within the protected area, most types of bottom-tending fishing gear such as trawls, dredges, bottom longlines, and traps are prohibited in order to protect deep-sea coral habitat.
- In July 2021, NOAA approved the New England Fishery Management Council's Omnibus Deep-Sea Coral Amendment. The Amendment protects deep-sea coral gardens in the Gulf of Maine, along with more than 65,000 km² of offshore canyons, slope, and seamounts from impacts of most bottom-contact fishing gears. This action encompasses areas out to the U.S. EEZ and represents a companion to the protections implemented under the Lautenberg Deep-Sea Coral Protection Area to the south.
- In January 2020, new essential fish habitat conservation areas and deep-sea coral protection measures went into effect for the U.S. West Coast (Pacific Fishery Management Council Region) to minimize significant adverse impacts from groundfish fisheries. This action protects an additional 319,000 km² of seafloor containing vulnerable habitats from bottom trawling. The Pacific Fishery Management Council subsequently voted to reopen more than 7,000 km² of historically important fishing grounds, and add more than 26,000 km² of new fishing closures to protect important habitat for hundreds of commercial species. As a precautionary measure, an additional 319,000 km² of unfished deep habitats were closed to seafloor-contact gear to protect deep-sea corals. These landmark actions present a unique opportunity to study deep-sea coral damage, recovery potential, and habitat management implications.
- In November 2020, 21 new Habitat Areas of Particular Concern were established in the Gulf of Mexico. Thirteen of these areas, covering 787 km², include regulations to protect deep-sea corals from damaging fishing gear. Boundaries include the first coral habitats deeper than 200 m to be protected in the Gulf.
- In March 2021, the Flower Garden Banks National Marine Sanctuary expanded to protect 14 new reefs and banks, and adjusted boundaries of its original three banks in 2021 to encompass more than 260 km² more.

As a result of these actions, protection of vulnerable deep-sea habitats from significant adverse impacts from deep-sea fishing has become a central theme in U.S. ecosystem-based fisheries management.

Flag State Implementation

Currently, only one U.S. vessel is authorized to conduct bottom fisheries in areas beyond national jurisdiction, in NAFO waters. No U.S. vessels are authorized to conduct bottom fisheries in areas beyond national jurisdiction outside of RFMOs. Two of the primary U.S. statutes that influence the regulation of fishing activities by U.S. vessels in areas beyond national jurisdiction that are not covered by an RFMO of which the United States is a member are the

High Seas Fishing Compliance Act (HSFCA) of 1995 (16 U.S.C. §§ 5501-5509) and the National Environmental Policy Act of 1969 (NEPA). The United States regulates activities of U.S. flagged fishing vessels operating on the high seas pursuant to the HSFCA. The purpose of HSFCA is to establish a system of permitting, reporting, and regulating U.S. vessels that fish on the high seas and to implement the FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (the Compliance Agreement). Pursuant to the HSFCA, U.S. fishing vessels engaging in commercial harvesting operations on the high seas must have a valid permit aboard. The HSFCA includes requirements for the installation and operation of enhanced mobile transceiver units for vessel monitoring, carrying observers on vessels, reporting of transshipments taking place on the high seas, and protection of VMEs.

As a matter of U.S. policy, permits are only issued for those fishing activities reviewed pursuant to NEPA. NEPA generally requires U.S. federal agencies to evaluate the potential environmental impacts when planning an action. Pursuant to NEPA, should NMFS decide to authorize bottom fishing on the high seas outside of RFMOs, such authorization will only be granted upon completion of an assessment of impacts to the environment, including on VMEs, as appropriate.

Progress in RFMOs

The United States is a member of several RFMOs with competency to manage deep sea fisheries, including CCAMLR, NAFO, NPFC, and SPRFMO. We continue to work within these organizations to continue to improve and enhance management measures within these organizations, taking into account best available science. Each of these RFMOs have adopted management measures for target and non-target stocks, reflecting the ecosystem-approach to fisheries management and the precautionary approach, as well as protection for VMEs from bottom fishing activities.

The United States strongly supports transparency and information being publicly available, and therefore supports RFMO/As with the competence to regulate bottom fisheries to make assessments and the measures adopted pursuant to paragraph 83 of UNGA Resolution 61/105 publicly available via their organization's website or other means available. The United States notes that the measures adopted by CCAMLR, NAFO, SPRFMO, and SEAFO are publicly available on their websites.

The United States strongly supports States' cooperation and efforts to establish, as appropriate, RFMO/As competent to regulate bottom fisheries in areas beyond national jurisdiction where no such organizations or arrangements exist, pursuant to paragraph 124 of UNGA Resolution 64/72. Further, the United States reminds States of their commitments under paragraph 86 of UNGA Resolution 61/105 and paragraph 120 of UNGA Resolution 64/72. Therefore, the United States continues to call upon flag States to either adopt and implement measures in accordance with paragraph 83 of UNGA Resolution 61/105 and 119 of UNGA Resolution 64/72, or cease to authorize fishing vessels flying their flag to conduct bottom fisheries in areas beyond national jurisdiction where there is no RFMO/A with the competence to regulate such fisheries or interim measures, until measures are taken in accordance with the relevant paragraphs of UNGA Resolutions 61/105 and 64/72 and consistent with the FAO's International Guidelines for the Management of Deep-sea Fisheries in the High Seas.

Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

CCAMLR has been implementing several conservation measures related to bottom fishing in its Convention Area since November 2008. In addition to prohibiting the use of bottom trawling gear in the high seas areas, CCAMLR set out guidelines for contracting parties to notify the

Secretariat of encounters with VMEs during both fishing and research operations.

The CCAMLR Scientific Committee continues to identify new VMEs and VME Risk Areas from bottom fishing activities. A VME is declared with direct evidence: VMEs are detected and their presence confirmed, through fishery-independent research activities. A VME Risk Area is an area where 10 or more VME indicator species are recovered within a single line segment by a fishing vessel during fishing activities. CCAMLR maintains a registry of 53 VMEs and 81 VME Risk Areas in the Convention Area. CCAMLR has measures in place for notifying the Secretariat when a vessel encounters VME indicator species (CM 22-06/Annex B), and notification and move-on rules to minimize further impact of a possible VME (CM 22-07). Three VME Risk Areas were added to the VME Registry in 2021 and one so far in 2022. The VME Registry is maintained by the Secretariat and available for public download from the CCAMLR website¹.

North Pacific Fisheries Commission (NPFC)

The United States ratified the Convention on the Conservation and Management of High Seas Fisheries Resources in the North Pacific Ocean and became a member of the organization in 2017. NPFC has adopted two bottom fishing measures: (1) Bottom Fisheries and Protection of VMEs in the NW Pacific Ocean (CMM 2019-05), and 2) Bottom Fisheries and Protection of VMEs in the NE Pacific Ocean (CMM 2019-06). In addition, the NPFC adopted an Adaptive Management Plan for North Pacific Armorhead. This Management Plan includes an annual survey that determines whether there will be additional closed areas and harvest limits. Further details can be found in CMM2019-05.

Finally, NPFC has engaged in efforts to improve its scientific understanding of VMEs in the area. For example, NPFC and FAO collaborated on a VME workshop in spring 2018². . In 2022, the United States and Canada will collaborate to better understand the distribution of VMEs on northeast Pacific seamounts in support of fisheries management both within our respective EEZs and in the NPFC region.

South Pacific Regional Fisheries Management Organization (SPRFMO)

The Convention on the Conservation and Management of the High Seas Fishery Resources of the South Pacific Ocean entered into force on August 24, 2012, and established SPRFMO. The United States ratified the Convention and became a member of SPRFMO in 2017.

SPRFMO continues to improve the comprehensive conservation and management measure on bottom fishing it adopted in 2014. To that end, the United States supported Australia and New Zealand's proposal to amend SPRFMO's conservation and management measure for bottom fishing at the SPRFMO annual meeting in 2019. The proposal, which was adopted, incorporates a spatial management approach and a new protocol for encounters with VMEs³. The United States also supported a new SPRFMO conservation and management measure for deepwater species⁴.

Additionally, SPRFMO conducted a review of its bottom fishing measure in 2021. To support that work, in 2019, SPRFMO's Scientific Committee considered how to improve the VME encounter

¹ <https://www.ccamlr.org/en/document/data/ccamlr-vme-registry>

² The report of this meeting is available here:

<http://www.fao.org/3/ca6389en/CA6389EN.pdf&sa=D&source=docs&ust=1649186065310004&usg=AOvVaw09rZzUX-d2ldmJiPzKSWL1>

³ More information: <https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2019-CMMs/CMM-03-2019-5Mar2019.pdf>

⁴ More information: <https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2019-CMMs/CMM-03a-2019-5Mar2019.pdf>

thresholds as well as outlined an approach to review the list of species considered to be VME indicator taxa. The Scientific Committee recommended that new thresholds and species lists be considered during the 2021 review, taking into account progress at other RFMOs. At the 2021 meeting, Australia, New Zealand, and the European Union (EU) offered separate proposals to revise the bottom fishing conservation and management measure. The United States worked with the three members on a consolidated proposal that was adopted by consensus. The measure adopted in 2021 amended the Scientific Committee's considerations when reviewing a VME encounter, updated the Annex 5 list of VME taxa consistent with the Scientific Committee's advice, lowered certain VME thresholds in Annex 6a, and called for a review of the measure in 2022.

In advance of the 2022 meeting, the Scientific Committee undertook a significant amount of work related to reported VME encounters and the review process for such encounters, encounter weight thresholds and move-on distance, VME taxa (including identification), and bottom protection scenarios. Given the virtual format of the 2022 annual meeting, limited time available, and complexity of the issues, New Zealand, Australia, the EU, Chile, and the United States determined that review of the measure should be done through an intersessional process leading up to the 2023 meeting. The United States led the preparation of a draft proposal and a draft intersessional work plan to achieve this objective. The U.S. proposal, which incorporated technical amendments by the Secretariat, and the work plan were adopted. An intersessional working group will be preparing a report that summarizes findings and recommendations for the Commission to consider in 2023.

Northwest Atlantic Fisheries Organization (NAFO)

Since 2016, NAFO has continued to refine management measures to protect VMEs, including dramatically increasing the scientific understanding of the role of VME taxa, such as sea pens and sponges, has on the overall health of the benthic environment. These advances will inform the 2020 and 2021 review of management measures to protect VMEs in NAFO Regulatory Area.

In addition, in 2016, as a result of a U.S. proposal, NAFO closed an additional 239 km² of its Regulatory Area to protect significant concentrations of sea pens, although some of this area was later re-opened in 2019 to fishing activities. In 2017, also as a result of a U.S. proposal, NAFO agreed to close additional seamounts, and in doing so, protected the entire New England Seamount chain. The protection of the entire chain helps to maintain biological connectivity and functioning of seamount communities at all depths.

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 NAFO Regulatory Area, before the additional new VME closures were agreed and implemented. Results of this assessment 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. 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.

In 2022, NAFO expanded the boundaries of its existing seamount area closures, added six new seamount closures, and extended the effectiveness of all seamount closures for another five 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 of these closed areas were increased in size. A further four 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 km², 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.

Parallel to these VME protection efforts, NAFO has advanced its efforts to develop a roadmap to implement an ecosystem approach to fisheries management. Over the past few years, scientists and managers have refined the goals of the roadmap, agreeing that it will be an important tool to inform managers of the larger ecosystem impacts of management decisions.

Western Central Atlantic Fishery Commission (WECAFC)

The United States actively participates in and fully supports WECAFC's preparatory process to consider the future of the organization as a Regional Fisheries Management Entity or Arrangement. In 2014, the United States participated in the Technical Workshop on Bottom Fisheries in the High Seas of the Western Central Atlantic, organized by the FAO and the Western Central Atlantic Fisheries Commission. This meeting explored the location of VMEs in the area, and possible fishing impacts on these VMEs. As WECAFC continues to evolve, the United States will support flag States, individually and collectively, in their implementation of the relevant UNGA Resolutions and the FAO's Guidelines.

Capacity building

The United States 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 FAO Guidelines, and the implementation of relevant paragraphs of UNGA Resolutions 61/105, 64/72, and 66/88. To that end, NOAA is a partner in the Global Environment Facility's Areas Beyond National Jurisdiction (ABNJ) Program on deep seas, which assists developing nations in their implementation of the FAO Guidelines. Among a number of other initiatives, project partners have examined RFMO management measures and developed best practices for consideration by those organizations, industry partners and stakeholders.

Scientific Research to support Management

The United States has a robust scientific program to improve our understanding of deep water ecosystems, with a goal of informing management decisions. NOAA maintains a database of Deep-Sea Corals and Sponges⁵ that includes over 830,000 records. Of these, over 10,000 records are from high seas areas in fishable depths. Additional information on recent U.S. research on VMEs is summarized in NOAA's report "The State of Deep-Sea Coral and Sponge Ecosystems of the United States" (Hourigan, 2017).

Some highlights of this work since 2016 include:

Exploration and characterization of deepwater vulnerable marine ecosystems. Since 2015, the U.S. has led major expeditions in both the Pacific and the Atlantic that have discovered new VMEs and enhanced understanding of their importance and connectivity. Examples include:

- The 3-year Campaign to Address Pacific Monument Science, Technology & Ocean Needs (CAPSTONE), conducted the first remotely operated vehicle (ROV) surveys for many of these U.S. and international regions in the Central & Western Pacific (Kennedy et al. 2019). A major focus of the surveys was to identify high-density deep-sea coral

⁵ <https://deepseacoraldata.noaa.gov/>

and sponge habitats (i.e., VMEs). Of 188 Dives, 56 included previously unknown High (> 5,000 per km) or Very High (> 10,000 per km) deep-sea coral or sponge communities – including within the management areas of NPFC and SPRFMO. The CAPSTONE project resulted in more than 635,000 km² of seafloor mapped, including fishable seamounts in areas beyond national jurisdiction. This campaign aboard the NOAA Ship Okeanos Explorer allowed remote participation by nearly 270 scientists, students, and managers from around the world. Initial results contributed to the 2016 expansion of the Papahānaumokuākea Monument to become the largest MPA in U.S. waters. The National Science Foundation (NSF) funded surveys of important fishing grounds in Emperor Seamounts (NPFC region) which revealed the first deep-sea coral reefs known from the region (Baco et al. 2017). These surveys are providing information that can help clarify timelines for VME recoveries (Baco et al. 2019). Subsequent ROV surveys of additional Emperor Seamounts were conducted in 2019 with support from the Schmidt Ocean Institute. U.S. scientists have also participated in additional research and mapping in the SPRFMO & NPFC regions with support from NOAA, the Ocean Exploration Trust, the Schmidt Ocean Institute, and the Government of South Korea.

- The United States and Canada published results of joint research on VMEs of Cobb Seamount (NPFC) (Du Preez et al. 2015, Du Preez et al. 2016).
- NOAA is collaborating with international partners from the European Union and Canada to expand mapping, research, and exploration in the Atlantic. In 2018, NOAA hosted a science planning workshop for the Atlantic Seafloor Partnership for Integrated Research and Exploration (ASPIRE), where VMEs were identified as a priority. In 2021, the NOAA Ship Okeanos Explorer conducted ROV telepresence surveys on the New England and Corner Rise Seamounts in the NAFO region, and there are plans for additional exploration, including a series of three expeditions in 2022 to explore the Mid-Atlantic Ridge, Azores Plateau, and Charlie-Gibbs Fracture Zone⁶.

In addition, the United States has led modeling efforts to better understand the distribution of VMEs & VME indicator taxa and their habitat suitability. This work includes:

- In a series of papers, researchers from Alaska have developed and ground-truthed new deep-sea coral and sponge predictive models (Rooper et al. 2014, Sigler et al. 2015, Rooper et al. 2016, Rooper et al. 2017).
- A subsequent study used modeling techniques to show that in both the Bering Sea and the Aleutians, the presence of structure increases the density of rockfishes (Rooper et al. 2019). In this study, the researchers concluded that removal of deep-sea corals and sponges is likely to reduce the overall density of rockfishes, an important commercial fisheries species.
- New deep-sea coral and sponge distribution models for the Northwest Atlantic have been developed for the Gulf of Mexico (Goyert et al. 2021) and the U.S. Atlantic (Poti et al. in press) based on both presence and absence data (previous models, e.g., Kinlan et al. 2020, have all been presence-only models).
- Bauer et al. (2017) developed deep-sea coral habitat suitability models for Hawaii (Bauer et al. 2016), and these have recently been expanded to include all of Papahānaumokuākea Marine National Monument (Poti et al. in prep.).
- New deep-sea coral and sponge models for the U.S. West Coast have been completed (Poti et al. 2020).

⁶ <https://oceanexplorer.noaa.gov/okeanos/explorations/2022-overview/welcome.html>

- In 2019, NOAA supported an international workshop on Good Practices for Species Distribution Modeling of Deep-Sea Corals and Sponges for Resource Management: Data Collection, Analysis, Calibration, and Communication (Winship et al. 2020).

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