Halting and reversing biodiversity loss in the deep sea
A critique of compliance by high seas fishing nations and RFMOs with global environmental commitments – October 2020

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ANNEX A, SECTION 9: Detailed review of actions taken by GFCM

Mediterranean Sea

Figure A9: Map of the GFCM Regulatory Area
Regulatory body: General Fisheries Commission for the Mediterranean (GFCM)

Area covered: The GFCM regulates bottom fisheries in the high seas portions of the Mediterranean Sea.

Contracting Parties: Albania, Algeria, Bulgaria, Croatia, Cyprus, Egypt, the European Union, France, Greece, Israel, Italy, Japan, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Romania, Slovenia, Spain, Syria, Tunisia and Turkey.

Co-operating Non-Contracting Parties: Bosnia and Herzegovina, Georgia, Jordan, Republic of Moldova and Ukraine.

Table A9.1: GFCM “fishable“ areas and seamounts

<table>
<thead>
<tr>
<th>GFCM</th>
<th>% “Fishable” area</th>
<th>% “Fishable” seamounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas closed to bottom trawling</td>
<td>24.6</td>
<td>37.8</td>
</tr>
<tr>
<td>Areas where bottom fishing is permitted</td>
<td>75.4</td>
<td>62.2</td>
</tr>
<tr>
<td>Total</td>
<td>1,067,965 km²</td>
<td>133 seamounts</td>
</tr>
</tbody>
</table>

Description of deep-water fisheries

Main deep-water fisheries (catch)

The main deep-water fisheries are for various types of deep-water shrimp and hake.

FAO estimated that the catch from bottom fisheries in 2016 was around 20,000 tonnes of finfish, mostly European hake, and about 25,000 tonnes of shrimp, mostly deep-water rose shrimp, and blue and giant red shrimp. Another 12,000 tonnes of red shrimp were estimated to be caught in the Mediterranean, some of which, like hake, were taken in shallow-water areas.¹

Implementation of measures to protect VMEs from SAIs and ensure the long-term sustainability of deep-sea fish stocks

Many of the habitats in the GFCM Area are vital to commercial species, both juveniles and adults. It is widely acknowledged that several of these important VMEs have been largely...
destroyed across wide areas of the Mediterranean as a result of bottom fishing, especially trawling. In 2005, the GFCM adopted a binding recommendation to prohibit bottom trawling below 1,000 meters for the protection of seabeds and to reduce the impacts of these fisheries on deep-sea ecosystems. The GFCM in 2006 adopted fisheries restricted areas (FRAs), a specific area-based management tool to protect VMEs in the region. Four areas have been closed to bottom fishing as a result of FRA designations.

The GFCM has since adopted a mid-term strategy (2017-2020) towards the sustainability of Mediterranean and Black Sea fisheries. This includes:

- “The promotion of the identification and establishment of new FRAs to protect priority areas within ecologically or biologically significant marine areas (EBSAs), VMEs, etc. from harmful fishing activities, and the implementation of monitoring and control systems to ensure the efficiency of these spatial measures, also in relation to Target 3. This action should aim to achieve at least the protection of 10% of the coastal and marine areas, as expressed in Aichi Target 11. The CPCs should be closely involved in the  definition of new FRAs.

- “The adoption of a comprehensive regional management plan for red coral, based on previous technical work carried out in the context of the GFCM subsidiary bodies, including relevant GFCM guidelines, and updated advice as provided within Output 1.3.”

In 2017, the Commission established a permanent working group on VMEs through resolution GFCM 41/2017/4 to collect information and map VMEs, advise on new proposals for closed areas and improve collaboration with the scientific bodies of other RFMOs.

Since the strategy and working group are ongoing at the time of this review, it is difficult to assess the progress of either in further achieving the desired outcomes of the UNGA resolutions.

At its 2018 meeting, the Commission also endorsed the program of work for the period from 2018 to 2020 on the management of deep-sea fisheries and protection of VMEs, including development of a database for VME indicator features and species; resubmitting proposals for closures in the Bari Canyon and the Southern Adriatic; developing essential fish habitat maps for priority species; producing a review of bycatch in the GFCM area; and continuing to implement bycatch monitoring for VMEs and fish species.

**Impact assessments**

The GFCFM has not completed impact assessments and does not have any requirements to provide them.
Identify and close areas where VMEs are known or likely to occur unless bottom fisheries are managed in such measures to prevent SAIs

Recommendation GFCM/2006/3 established areas protected from fishing with towed dredges and bottom trawls around the *Lophelia pertusa* reefs at Santa Maria de Luca, the cold seep ecosystems in the Nile Delta, and the benthic communities of the Eratosthenes Seamount, representing about 15,666 km² of seabed. Recently, a further FRA has been proposed in the Gulf of Lion, specifically to protect spawning grounds of the hake *Merluccius merluccius*.

This conservation measure is only a temporary freeze on current fishing effort and so offers limited protection to benthic communities. The ban on fishing below a depth of 1,000 meters does confer protection to benthic species whose distribution lies partially or wholly below these depths. However, ecologically important deep-sea VMEs remain vulnerable, including coral gardens formed by *Isidella elongata*, *Funiculina quadrangularis*, other corals, and other habitat-forming groups such as crinoids and brachiopods, which customarily occur at depths shallower than 1,000 meters.

There are also concerns about possible illegal fishing in these FRAs and a lack of monitoring and compliance. An analysis of Global Fishing Watch data revealed apparent fishing behavior inside the FRAs, despite only 1% of the GFCM area being covered by the restricted zones.

Move-on rule/cease fishing in areas where VMEs are encountered

There is currently no move-on rule, or any requirement to cease fishing where VMEs are encountered, in effect in the GFCM Convention Area. However, at its 2018 meeting, the Commission endorsed the proposed VME and exploratory fishing reporting protocols, as well as elements towards the mapping of a bottom deep-sea footprint.

These protocols were endorsed following a presentation from the Scientific Advisory Committee (SAC) proposing a phased approach to VME protection. This included, in the first phase, the adoption of an encounter reporting protocol as well as working towards the determination of the fishing footprint and identification of potential thresholds for VMEs. The 2018 SAC Report notes that “the second phase would foresee the adoption of an exploratory fishing protocol and an encounter protocol including move-on rules.” The protocols for the protection of VMEs in the GFCM area of application require vessel captains to immediately report an encounter with VME indicator taxa during deep-sea fishing. Vessels are encouraged to use scientific observers to ensure that the encounters are reported accurately. The Secretariat is then required to compile and map all data of encounters and inform the SAC on this data. The SAC then reviews and proposes new management measures, including FRAs to ensure the protection of these ecosystems, to the Commission.
On mapping deep-sea fishing areas, GFCM Contracting Party or Co-operating non-Contracting Party (CPCs) with vessels involved in deep-sea bottom fisheries are required, to the extent possible, to submit no later than 31 December 2020 “comprehensive maps of existing deep-sea bottom fishing areas [during the five-year period of 2012-2016] to the GFCM Secretariat. Maps shall be based on VMS/AIS data and/or other available geo-reference data and be expressed in as precise spatial and temporal resolution as possible.”

GFCM CPCs of flagged fishing vessels undertaking exploratory (or new) deep-sea bottom fishing are required to complete the exploratory deep-sea bottom fishing protocol, provided in Annex 1 of the 2017 report of the first meeting of the Working Group on Vulnerable Marine Ecosystems (WGVME) of the SAC, including information on VME indicator taxa. Many of the trawl fisheries in the deep waters of the Mediterranean are multispecies and have SAIs on non-target species, some of which – including several species of deep-sea angel shark – have been so severely impacted by fishing that they are regionally recognized as critically endangered, endangered or threatened, raising the risk of a long-term reduction in biodiversity of benthic communities in the deep Mediterranean.13

**Other issues**

At present, the GFCM has called for a minimum mesh size of 40mm in the cod end of nets and a 10% effort reduction by demersal fisheries in the Mediterranean. However, the 40mm mesh size requirement will not prevent the continued decline of the majority of threatened deep-sea species, and its conservation value in waters down to 1,000 meters depth in preventing environmental impacts by multispecies demersal trawl fisheries is not clear. It is also not yet clear where the reductions in fishing effort will take place and whether any benefits will accrue for deep-water species and habitats.

**Conclusion and recommendations**

The Mediterranean Sea has a unique marine fauna that includes deep-sea VMEs formed by a variety of taxa, some of which are most common within, or unique to, the region. It is widely acknowledged that these ecosystems have been seriously impacted by bottom fishing.

At present, three areas have been protected from deep-water dredging and trawl fishing, and fishing is banned at depths below 1,000 meters. No specific measures are in place to detect or map VMEs in the Mediterranean region, or to manage impacts on them by bottom fisheries outside current protected areas. There is no move-on rule or requirement to cease fishing where VMEs are encountered. The GFCM has established FRAs but there are concerns about possible illegal fishing in these areas, so additional monitoring and compliance is likely needed.
However, at its 2018 meeting, the Commission endorsed the proposed VME and exploratory fishing reporting protocols, as well as the elements towards the mapping of bottom deep-sea footprint.14

To advance the effectiveness of conservation measures in the GFCM Area, and move towards the implementation of the UNGA resolutions, DSCC recommends that the Commission should:

1. Complete mapping of the deep-sea fishing footprint.
2. Increase monitoring and compliance in existing closed areas.
3. Implement additional closures, based on VME mapping and data collected from encounter reports.
4. Adopt a process through which to conduct impact assessment of bottom trawl fisheries.


3 Its tasks were to (i) collect information and map the distribution of VMEs; (ii) advise on new proposals for closures and on the enforcement of existing measures (e.g. of existing fisheries restricted areas [FRAs] addressing VME protection); (iii) assess technical information; (iv) advise the Scientific Advisory Committee on Fisheries (SAC) on matters related to VMEs; (v) contribute to designing and managing a Mediterranean VME geodatabase; and (vi) contribute to the establishment of a close collaboration and proper communication channels with scientific bodies from other RFMOs.


*Management of deep-sea fisheries (DSF) and protection of vulnerable marine ecosystems (VMEs)*

- Develop the GFCM Mediterranean geodatabase on VME indicator features and species.
- Complete and resubmit the proposal of a FRA in the Bari canyon (south Adriatic) for discussion at the SRC-AS.
- Resubmit the proposal of a FRA in deep-water essential fish habitats and sensitive habitats in the south Adriatic (Otranto channel) for discussion at the WGVME and the SRC-AS.

*Mapping and roadmap towards a network of essential fish habitats*

- Work towards producing composite observation-based essential fish habitat (EFH) maps for some GFCM priority species.
• As a second step of the proposed roadmap towards a network of EFH, work towards determining how previously identified EFH and SH are connected. This analysis should include scientific knowledge of how nursery and spawning habitats are ecologically connected.

*Bycatch and fishing technology issues*

• Produce a regional review on the current state of bycatch in the GFCM area.
• Continue implementing, with relevant partners, a bycatch monitoring programme and related training activities, to collect representative data and facilitate the potential adoption of management measures towards the reduction of bycatch rates as well as the protection of VMES.

5 Recommendation GFCM/30/2006/3 on the establishment of fisheries restricted areas to protect deep-sea sensitive habitats.


7 Standard Format for the Submission of Proposals for GFCM Fisheries Restricted Areas (FRA) in the Mediterranean. 23 September, 2008.

8 Recommendation GFCM/33/2009/1 on the establishment of a fisheries restricted area in the Gulf of Lion to protect spawning aggregations and deep-sea sensitive habitats.

9 Ibid.


11 GFCM 2018 Report, above note 4, paragraph 65.


14 GFCM 2018 Report, above note 4, paragraph 65.
The Stichting Deep Sea Conservation Coalition is registered with the Netherlands trade register under number 59473460.

**Acronyms**

BFIA  bottom fishing impact assessment  
CBD  Convention on Biological Diversity  
CCAMLR  Commission for the Conservation of Antarctic Marine Living Resources  
CMM  conservation and management measure  
CEM  Conservation and Enforcement Measure  
CPUE  catch per unit effort  
DOSI  Deep Ocean Stewardship Initiative  
DSCC  Deep Sea Conservation Coalition  
EEZ  exclusive economic zone  
ERAWG  Ecological Risk Assessment Working Group (SOFIA)  
EU  European Union  
FAO  Food and Agriculture Organization of the United Nations  
FRA  Fisheries Restricted Area  
HERMIONE  Hotspot Ecosystem Research and Man's Impact on European Seas  
HSFG  High Seas Fisheries Group (SPRFMO)  
ICES  International Council for the Exploration of the Sea (NEAFC)  
IEO  Instituto Español de Oceanografía (Spain)  
IPBES  Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services  
IPCC  Intergovernmental Panel on Climate Change  
IPSO  International Programme on Science and the Oceans  
IUCN  International Union for the Conservation of Nature  
IUU  illegal, unreported and unregulated  
MPA  marine protected area  
NAFO  Northwest Atlantic Fisheries Organization  
NEAF C  North-East Atlantic Fisheries Commission  
nm  nautical mile  
NPFC  North Pacific Fisheries Commission  
PICES  North Pacific Marine Science Organization  
RFMO  regional fisheries management organization  
SAI  significant adverse impact  
SDG  Sustainable Development Goal  
SEAFO  South East Atlantic Fisheries Organisation  
SIODFA  Southern Indian Ocean Deepsea Fishers Association  
SIOFA  South Indian Ocean Fisheries Agreement  
SPRFMO  South Pacific Regional Fisheries Management Organisation  
SSRU  small-scale research unit  
TAC  total allowable catch  
UNFSA  United Nations Fish Stocks Agreement  
UNGA  United Nations General Assembly  
VME  vulnerable marine ecosystem  
VMS  vessel monitoring system  
WGDEC  Working Group on Deep-Sea Ecology (NAFO/ICES)  
WGEAFM  Working Group on Ecosystem Approach to Fisheries Management (NAFO)  
WGESA  Working Group on Ecosystem Science Assessment (NAFO)  
WOA  World Ocean Assessment