



**North Pacific Fisheries Commission**

NPFC-2021-SSC BFME02-IP04

## **Review of other RFMOs' practices regarding developing maps of combined fishing footprint**

NPFC Secretariat

### **Abstract**

The SSC BF-ME01 meeting recognized the need to hold further discussions on the objective(s) of developing maps of combined fishing footprint, which could inform the setting of the appropriate data resolution and time period. The intent of this paper is to review other RFMOs' practices regarding developing maps of combined fishing footprint and assessing cumulative impact of bottom fisheries on vulnerable marine ecosystems (VMEs).

### **Background**

The VME workshop organized by the NPFC and the FAO in March 2018 recommended to “map a combined fishing footprint and effort to better identify fishing grounds using data from all NPFC Members by gear type and time”. The recommendation was endorsed by the SSC VME03 meeting and recognized as one of the priority tasks.

Following up with this decision, the SSC VME held a data workshop in November 2018. The data workshop was aiming at developing a data wish list and identifying minimum data required for creating a combined footprint and effort map of all bottom fisheries and a combined assessment of significant adverse impact (SAI) on VMEs in the Convention Area. The data workshop drafted a list of potentially available data and recommended to identify appropriate temporal and spatial resolution of data to be shared in order (1) to map a combined fishing footprint and effort to better identify fishing grounds and (2) to define the fishing footprint in relation to assessing SAI.

In 2019-2020, Members shared and reviewed data and tasked the Secretariat to develop provisional maps of combined, gear-specific footprints (NPFC-2021-SSC BFME02-IP02). Additionally, they recognized the need to hold further discussions on the intended objective(s) of developing maps of combined fishing footprint, which could inform the setting of the appropriate data resolution and time period.

The intent of this paper is to review other RFMOs' practices regarding developing maps of combined fishing footprint and assessing cumulative impact of bottom fisheries on VMEs.

## **Other RFMOs' practices regarding developing maps of combined fishing footprint and assessing cumulative impact of bottom fisheries on VMEs**

### *South Pacific Regional Fisheries Management Organisation (SPRFMO)*

The history of bottom fishing management in SPRFMO is described on the website <http://www.sprfmo.int/science/bottom-fishing/>. Supporting the management, in 2019 the SPRFMO Scientific Committee developed a [Bottom Fishery Impact Assessment Standard](#) (BFIAS). The purpose of the BFIAS is to provide a standardized approach for assessing cumulative impacts of bottom fishing activities on VMEs, deep sea fish stocks and marine mammals, reptiles, seabirds and other species of concern within the SPRFMO Convention Area.

In accordance with the BFIAS, bottom fishing effort distribution maps are to be prepared using available tow-by-tow or set-by-set data or, if available, Vessel Monitoring System (VMS) data (noting that confidentiality restrictions need to be considered in accordance with CMM 02 (Data Standards)). Confidentiality requirements will influence the level of resolution at which the maps can be displayed. Accurate estimates of seabed swept area at 1km x 1km resolution or finer are required for quantitative risk assessment of seabed impact areas, probability of interaction with VME indicator taxa and discounting of biodiversity in previously fished areas.

Given the differences in impacts of bottom fishing by different bottom fishing gears, effort distribution should therefore be considered and mapped separately for each of the main bottom fishing methods: trawling, lining, potting and trap fishing. Consideration should also be given to fishing effort distribution for different periods of years, so that the Scientific Committee can evaluate both the cumulative duration of fishing impacts in various areas, and also the recovery time for areas fished in the past.

In 2020, Australia and New Zealand conducted a [Cumulative Bottom Fishing Impact Assessment](#).

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

A range of approaches have been used in the past to estimate cumulative impact of bottom fisheries on VMEs. The agreed upon approach was developed in 2010, and is described in the [Fishery Report on Bottom Fisheries and VMEs](#) (p. 9-11).

The report summarizes the status of knowledge on bottom fisheries and the types of interactions of fisheries with VMEs in CCAMLR. It provides current assessments of the impacts of bottom fishing on VMEs, and details the types of management strategies in operation or being

considered. It also provides management advice, including proposed revisions of conservation measures and priorities for future work.

Spatially explicit effort distributions for all bottom fishing gear types are extracted from the CCAMLR databases. The spatial scale of fishing effort distribution is approximately 5km x 5km.

The Fishery Report on Bottom Fisheries and VMEs was produced from 2010 to 2013 but thereafter discontinued. Other approaches are described in other reports (e.g. WG-FSA-18/43 and WG-FSA-19/67 (not public documents)). Some discussions of these papers were recorded in the [Scientific Committee reports](#) from 2018 and 2019.

#### *Southern Indian Ocean Fisheries Agreement (SIOFA)*

The SIOFA developed the [Bottom Fishing Impact Assessment Standard](#) (BFIAS). The purpose of the BFIAS is to provide a minimum standard for assessing the potential impacts of proposed bottom fishing activities on VMEs and deep sea fish stocks. The potential impacts include consideration of past fishing activity and the cumulative effects of fishing. This standard is intended to guide SIOFA parties in preparing the required bottom fishery impact assessments (BFIAs), and to guide the Scientific Committee when reviewing these assessments. It is intended to constitute the standardized approach to be taken by all participants when preparing risk and impact assessments for high seas, bottom fishing activities in the SIOFA Area.

To facilitate evaluation of the relationship between proposed fishing areas, an appropriate SIOFA bottom fishing footprint and existing VME maps, participants should provide all maps related to proposed fishing activities to the Secretariat in a compatible GIS format, for inclusion in the SIOFA geo-spatial database (where possible, noting confidentiality restrictions).

#### *The North East Atlantic Fisheries Commission (NEAFC)*

Analyses on the impact of bottom fishing on VMEs in the NEAFC Convention Area are conducted by ICES which is an external scientific advisor to NEAFC. ICES provides an annual report on VME habitats and indicators as well as potential vessel activity. The latest report is available at

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=38079>.

The OSPAR Commission, NEAFC's partner, also requests ICES to produce spatial data layers of fishing intensity/pressure (see the [latest request](#)). The spatial resolution of the map grids is 0.05° x 0.05°.

The ICES Working Group on Spatial Fisheries Data (WGSFD) focuses on collating and analyzing spatial fisheries data in order to evaluate fishing effort, intensity, and frequency in European waters. Members of WGSFD analyze produced maps of fishing activity in NEAFC areas using the VMS and logbook information collected by NEAFC. A product is delivered to the ICES Working Group on Deep-water Ecology (WGDEC), which is used in the assessment of fishing impact on VMEs (see [WGSFD report](#) for more details).