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Assessing bottom fishery impact using a CCAMLR-style
method

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Abstract

We present a spatially explicit summary of estimated bottom trawl footprint in deepwater fishing areas of the SPRFMO Convention Area, using a method developed for CCAMLR bottom impact assessment of longline fishing gear. The fishing footprint of trawls in the SPRFMO area were calculated using start and end tow positions. Tows were assumed carried out in a straight line, and split in 100m components in order to calculate footprint without resorting to GIS methodologies. Footprint was calculated for two given grid sizes (200m and 1km) assuming random overlap of tow segments, and aggregated at lower resolution.

The aim of the project was to illustrate the effects of spatial data (grid cell size) resolution in fishery footprint estimation, and to contrast the results between fishing patterns associated with different habitat types for orange roughy *Hoplostethus atlanticus*, such as underwater topographic features (UTF) (i.e., hills, knolls and seamounts) and continental slope areas. This represents a first step in methods development for spatially-explicit bottom impact evaluation for deepwater fisheries in the SPRFMO Area.

This initial investigation has shown the potential of using precise start and end positional data to develop a detailed understanding of the bottom trawling footprint for use in bottom impact estimation. The method could be developed further to a bottom fishing impact evaluation by calculating the impact of trawling given assumptions of the mortality of each trawl to specific taxa.