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Trait-based approach on deep-sea corals in the high-seas of the Flemish Cap and Flemish Pass (northwest Atlantic)

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Deep-sea coral aggregations represent important ecosystems in the Flemish Cap, where some areas have been closed to bottom fisheries by the Northwest Atlantic Fisheries Organization in order to implement conservation and management measures and prevent significant adverse impacts on Vulnerable Marine Ecosystems (VMEs). Flemish Cap is an offshore Bank located about 600 km to the east of Newfoundland, separated from the Grand Banks by the Flemish Pass, a channel approximately 1200 m deep. 40 taxa of corals were identified in the area from bottom trawl research vessel surveys (2006-2015) and rock dredges (2009-2010). They included 22 Alcyonacea, 11 Pennatulacea, 3 Antipatharia and 4 Scleractinia. Corals identified were classified according to their biological traits in an attempt to better understand their function in the ecosystem. This study analyzes which biological traits were useful to classify corals in the Flemish Cap and Flemish Pass prioritizing traits where information is available and that capture variation for a range of biological or ecological processes. This study represents a baseline classification, quantifying trait variation among species, for further studies such as habitat suitability models or impact studies from trawl fisheries and oil and gas exploitation, which represent the main potential human activities in the area.

Keywords: Biological traits, deep-sea corals, northwest Atlantic, VMEs

Short Description: Forty species of deep-sea corals from the northwest Atlantic were classified according to their biological traits