

## Black scabbardfish,



The biology, ecology, and dynamics of the deep-sea teleost black scabbardfish in the northeast Atlantic are reviewed. The black scabbardfish is a commercial bathypelagic species found in the NE Atlantic mostly from Iceland to the Canary Islands and Western Sahara, at depths from 800 to 1300 m. The spatial structure of its population is still uncertain, although the existence of one single stock that migrates around the NE Atlantic driven by feeding and reproduction is the most likely hypothesis consistent with available data. This review is based on data from commercial fisheries off the Faroe Islands, Hatton Bank, the west of the British Isles, and Portugal (mainland, Azores, and Madeira) and from Icelandic and Scottish scientific surveys collected between 1988 and 2012. Spawning of black scabbardfish occurs around Madeira and the Canary Archipelagos during the last quarter of the year. According to the migratory hypothesis, eggs, larvae, and possibly juveniles move north to areas from south of Icelandic and Faroe Islands to the west of the British Isles where they remain for some years to feed and grow. Then, they move south to the area off mainland Portugal, where they reach the size of first maturity but do not reproduce, and later move further south to the spawning grounds. Further studies are needed to understand which of the environmental conditions prevailing around Madeira and the Canaries, but not elsewhere, allow this species to mature and subsequently reproduce. This review suggests that a multidisciplinary approach is required to confirm the spatiotemporal migration and habitats used by black scabbardfish populations in the NE Atlantic at different life stages. Otolith contour shape and microchemistry, fatty acids, carbon and nitrogen stable isotopes, as well as steroid hormones are proposed as promising alternative tools for responding to this challenge.

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