Biology and fisheries of the spotted flounder (

Obtaining data to study fish biology can be a challenge if a stock is fished by a variety of gears with different effort units and different selectivity, particularly if these gears only partially overlap in space and time. In this work, we attempted to study the biology of the spotted flounder Citharus linguatula in the Patraikos Gulf and the adjacent central Ionian Sea (eastern Mediterranean) and to evaluate the current fisheries management. We characterized age composition and growth, length-at-maturity, and catch-per-unit-effort (CPUE) of spotted flounder from the catches of bottom trawls, gillnets and trammel nets for the period autumn 2013–2014. Variation of fish total length, gonadosomatic index, hepatosomatic index and condition factor was analyzed using generalized additive models (GAMs) with regard to sex, date, fishing gear and depth. We also modeled CPUE fluctuations of each gear by date, depth, longitude and latitude using GAMs. Fish age ranged from 1 to 5 years. A slightly allometric growth was documented with females attaining larger sizes than males. Length-at-maturity was 163 mm for females and 169 mm for males. The seasonal change of gonad maturity stages and the gonadosomatic index indicated spawning in late summer-autumn. Changes in length frequencies indicated that recruitment to the fisheries occurred in late spring-early winter in shallow depth (<40 m). The catch composition of trawls and the CPUE model results suggested that the selectivity of this gear should be regulated to reduce catching immature individuals of spotted flounder. The results further indicated that the seasonal trawl closure of the Patraikos Gulf contributes to reduce catching juveniles.

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