

# SPATIAL DISTRIBUTION OF THE FAMILY MULLIDAE IN THE ANATOLIAN COASTS

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## Abstract

Mullids obtained by trawlers in 2014 – 2015 from two different locations in the Anatolian coast have been assessed in order to reveal the spatial distribution and the relationship between depth and individual size. The spatial distribution and depth – individual size relations have been compared in four depth contours.

**Keywords:** *Fishes, Iskenderun Bay, Aegean Sea*

The family Mullidae consists of widely distributed benthic fishes (Atlantic, Indian and Pacific Oceans), represented with six species in the Mediterranean Sea [1, 2]. Five of these species are present in the Turkish coasts: *Mullus barbatus* Linnaeus, 1758, *Mullus surmuletus* Linnaeus, 1758, *Parupeneus forsskali* (Fourmanoir & Guézé, 1976), *Upeneus moluccensis* (Bleeker, 1855) and *Upeneus pori* Ben-Tuvia & Golani, 1989 [3]. Although *P. forsskali* is reported in the last decade in Turkish waters [4], the other four species are commonly present. Besides their ecological significance, Mullids are of economic value due to their high importance in fisheries. The study aims to provide information on spatial distribution of Mullids in two different areas in the Anatolian coasts; the Gökçeada Island (North Aegean Sea) and the Iskenderun Bay (Northeastern Levantine Sea). While the Iskenderun Bay inhabits all five mullid species, only the local species *M. barbatus* and *M. surmuletus* are present in the coasts of the Gökçeada Island. A total of 4711 Mullid individuals have been caught in the study areas, 2455 of these have been measured. Among the five Mullid species present in the Anatolian coasts, there have not been any *P. forsskali* individuals caught. The Mullids caught with trawlers were obtained from various depths. These depths have been categorized into 0 – 50 m, 51 – 100 m, 101 – 200 m and 200 – 500 m depth contours, and the relationship between their depth preferences and size has been analyzed. The distribution of Mullid species according to different depth contours for the Gökçeada Island is shown in Fig. 1a. Both *M. barbatus* and *M. surmuletus* species captured around the Gökçeada Island are mainly present at 0 – 100 m depth, nevertheless the number of both species decreases at depths greater than 200 m, which is a result that corresponds to the pertinent literature in the Mediterranean Sea [5, 6, 7]. Whereas in the Iskenderun Bay (Fig. 1b), *U. pori* seems to dominate the 0 – 50 m depth range among mullids, and has not been captured at greater depths than 100 m. *M. barbatus* and *U. moluccensis* are mainly present in the 50 – 200 m depth contour. It can be seen that the number of the *Mullus* sp. individuals in the Iskenderun Bay at the 0 - 100 m depth contour is considerably lower (especially *M. surmuletus*) (Fig. 1b) than the number of *Mullus* sp. individuals around the Gökçeada Island (Fig. 1a). This might be interpreted as an exotic pressure caused by the lessepsian *Upeneus* species on the local *Mullus* species.

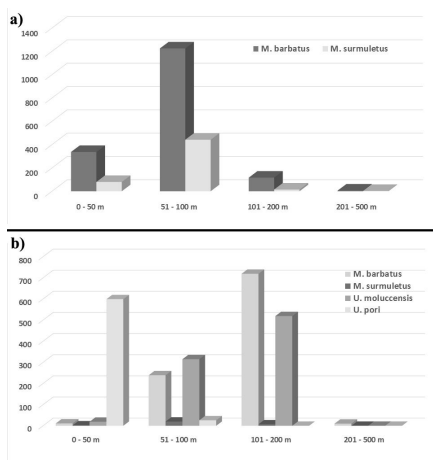


Fig. 1. Number of mullid individuals at different depth contours around

Gökçeada Island (a), and Iskenderun Bay (b)

The relationship between depth and individual size for *M. barbatus* and *M. surmuletus* caught in the coasts of the Gökçeada Island is shown in Figure 2a,b. This relationship indicates a pattern where the total length of individuals of both species increases with depth around the Gökçeada Island. This pattern has not been observed in the Mullids of the Iskenderun Bay, which may be due to ecological overlaps of Mullid species.

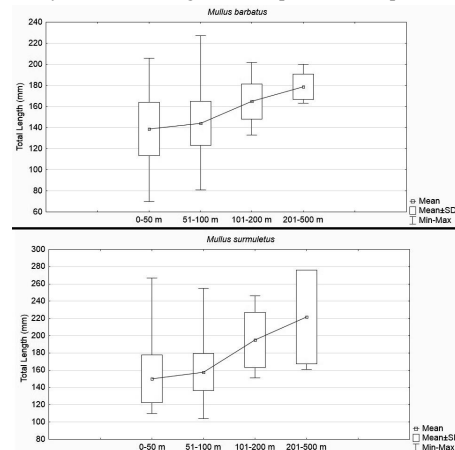


Fig. 2. Depth – Total Length relationship in *M. barbatus* (a) and *M. surmuletus* (b) around the Gökçeada Island

The Mullids obtained, except of *U. moluccensis*, have been found at anticipated depth ranges. Although the maximum depth of *U. moluccensis* has been reported as 120 m [2], in this study, the maximum depth *U. moluccensis* individuals have been caught from was 174 m.

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