

A PRELIMINARY STUDY ON THE FISH COMMUNITY STRUCTURE AROUND GOKCEADA ISLAND, NORTH AEGEAN SEA, TURKEY

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Abstract

This preliminary study was carried out in the mixed habitat (*Posidonia oceanica* and rocky) around Gokceada Island. Samples were collected with gill net and trammel net. A total of 2265 individuals were collected belonging to 44 species. *Chromis chromis*, *Spicara maena* and *Serranus scriba* were the most dominant species. Juvenile or sub-adult represented 16.6% of the total number of individuals. Diversity, species richness, evenness, and dominance had optimal values in May.

Keywords : *Fishes, Biodiversity, Aegean Sea.*

Introduction

Nearshore seagrass beds (*Posidonia oceanica*, *Zostera* spp., *Cymodocea nodosa*) are important areas having higher diversity and abundance of fish than nearby bare substrata [1, 2]. High structural complexity of vegetated habitat provides shelter, food and refuge for resident and temporary species [2, 3]. This study provides preliminary data on the fish community structure in a mixed habitat (*P. oceanica* and rocky) around the Gökceada Island.

Materials and methods

The sampling was carried out from March to August in 2003 in a mixed habitat (*Posidonia oceanica* and rocky) around Gokceada Island. Samples were collected with gill nets (mesh size: 22 mm; 120 m x 2.4 m) and trammel nets (mesh size: 18 mm; 180 m x 0.9 m), which were set from 5 to 10 m depth. Sampling took place four times per month. The number of individuals per species was determined in the laboratory. Community structure was approached by estimating diversity (H), species richness (D), evenness (J), and dominance (C) [4].

Results and Discussion

A total of 44 species were collected belonging to 24 families. This is a high value, considering also the short time of sampling, when compared with other studies in the same area [5]. The number of species was highest for the families Labridae (9 species) and Sparidae (8 species). *C. chromis* (23.2%), *S. maena* (18.8%) and *S. scriba* (10.6%) were the dominant species in terms of total number of individuals. *S. scriba* (Serranidae), *Symphodus mediterraneus*, *S. tinca* (Labridae), *Diplodus annularis*, *D. vulgaris*, *Sarpa salpa* (Sparidae), and *Scorpaena porcus* (Scorpaenidae) were the most common and abundant species (Figure 1). These are typical necto-benthic species living in *P. oceanica* seagrass beds and rocky areas in the Mediterranean coastal waters [3, 6]. Similar results were obtained in this study.

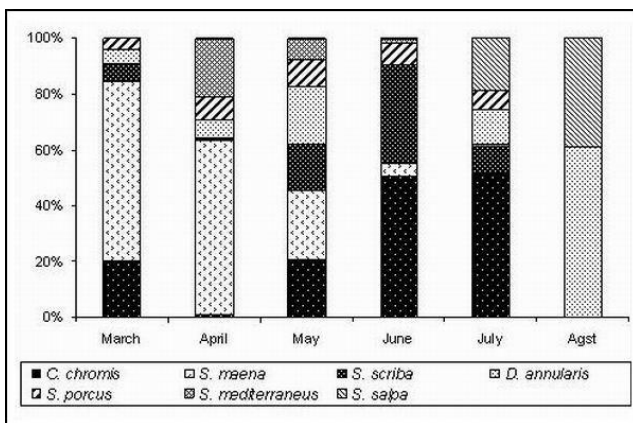


Fig. 1. Numerical percentage composition of most abundant species sampled around Gokceada Island from March to August in 2003.

Juveniles represented 16.6% of the total number of individuals, and their numbers increased from March to August. The number of species and individuals increased from March to August (Fig. 2). The diversity, species richness, evenness and dominance generally had optimal values in May (Fig. 2). Conclusively, the coastal waters of Gokceada Island represent

an important area with different habitat types for resident and temporary species.

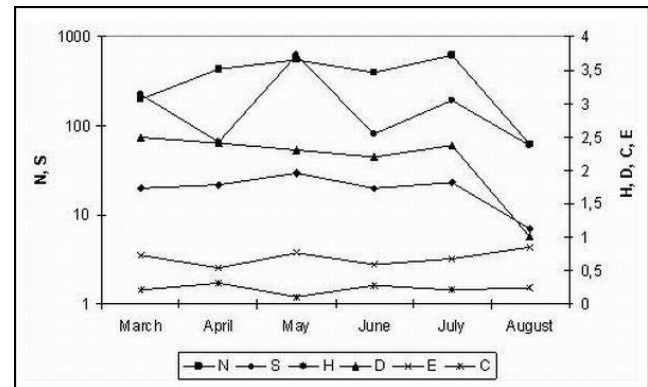


Fig. 2. The number of individuals (N), number of species (S), evenness (E), species richness (D), diversity (H), and dominance (C) around Gokceada Island, March to August in 2003.

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