FIRST ASSESSMENT OF THE NATURAL STOCK OF *MICROCOSMUS SABATIERI* IN SOUTH AEGEAN (GREECE)

Antoniadou C. [1], Chintiroglou C.C. [1] *, Voultsiadou E. [1] and Vafidis D. [2]

[1] Aristotle University, School of Biology, Department of Zoology, Thessaloniki, Greece - * chintigl@bio.auth.gr
[2] Fisheries Research Institute of Kavala, Nea Peramos, Kavala, Greece

Abstract

The spatial variation in population density and frequency distribution of the edible tunicate *Microcosmus sabatieri* was studied in South Aegean. Data was obtained with randomly placed frames. Overall, 316 specimens were collected and measured. Mean population density was 7 ± 1.87 indiv./m^2, while the pattern of dispersion was even. The size-frequency analysis indicated a mode at 10 cm.

Introduction

The continuous decrease of fish stocks has a severe economic impact on fisher's livelihood throughout the Mediterranean. Therefore a necessity emerges to turn from traditional fisheries resources to other alternatives (1). *Microcosmus sabatieri* Roule, 1885 is a Mediterranean endemic species, previously reported from the Aegean Sea (2). It is edible and of commercial interest in many Mediterranean areas (3). However, there is no data on its population structure.

This study present preliminary data on the status of *M. sabatieri* stocks in South Aegean, an area where it is strongly harvested.

Materials and Methods

Samples were collected with SCUBA diving at 3 sites (A: 36º30'459"N 26º19'859"E; B: 36º34'498"N 26º15'287"E; C: 36º31'733"N 26º28'317"E) along the coastline of Astypalaia, at a depth ranging from 30 to 55 m, in August 2003. The method of randomly placed frames (0.5 x 0.5 m) was applied to estimate population density and spatial dispersion, since *Microcosmus sabatieri* is an epibenthic and sessile species, thus permitting *in–situ* counting (4). In addition, all individuals found in a 30-min dive were collected and preserved in a 10% formalin solution.

Length-frequency distributions were constructed per site. Morisita's index was calculated at site B to estimate spatial dispersion. A chi-square test was used to determine the significance of deviation from random distribution (4).

Results and Discussion

Overall, 316 individuals of *Microcosmus sabatieri* were collected and measured. The mean population density from the three sampling sites was 7 ± 1.87 indiv./m^2. The lowest value (4 ± 1.17 indiv./m^2) was recorded at site A, the largest one (10 ± 2.1 indiv./m^2) at site B, whereas it was intermediate (6 ± 1.48 indiv./m^2) at site C. The pattern of dispersion was even (I = 1.15, x^2 = 7.2), which agrees with the territoriality behaviour of this solitary species (4).

The size-frequency histograms revealed a similar pattern among the three sites with a mode at 10 cm (Fig. 1). Size ranged from 2 to 16 cm, with the largest individuals caught at site B and the smallest ones at site C. The maximum length reported for the Mediterranean Sea is 22 cm (3), which is larger than the ones reported here (Fig. 1), a fact that might be the result of a strong fishing pressure.

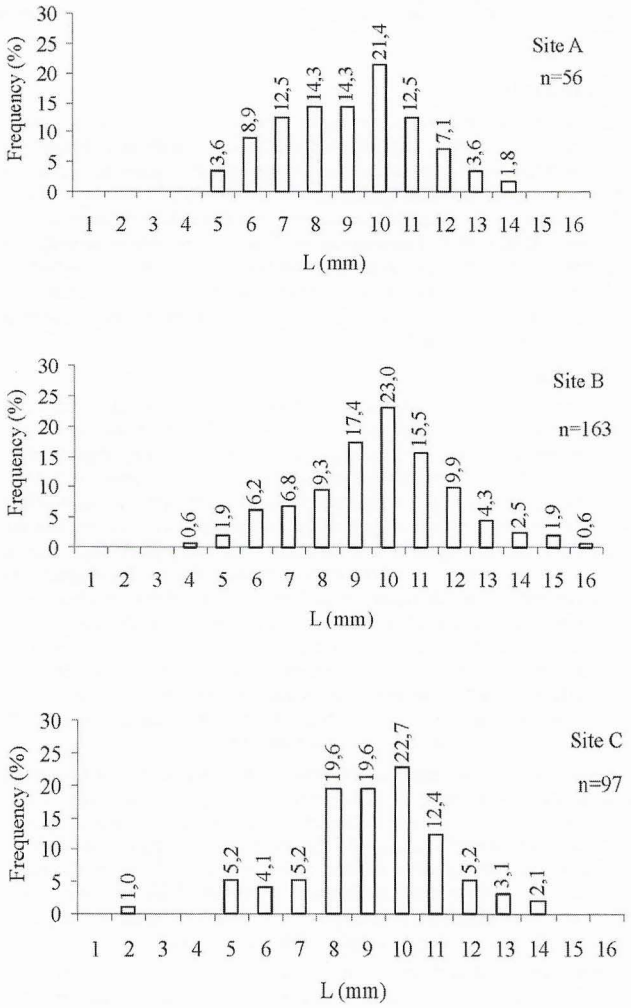

Fig. 1. Size-frequency distribution for *Microcosmus sabatieri* at different sites. n = number of individuals.

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