ABUNDANCE OF CLADOCERANS IN THE ERDEK BAY (SW MARMARA SEA)

Ozgur Emek Inanmaz *, Cetin Keskin
Canakkale Onsekiz Mart University, Faculty of Fisheries, Canakkale, Turkey -* emek1@turk.net
Istanbul University, Fisheries Faculty, Laleli, Istanbul, Turkey -seahorse@istanbul.edu.tr

Abstract

In this study abundance of Cladocerans were examined in the Erdek Bay (SW Marmara Sea) during the period of July 2000 to May 2001. Samples were collected from eight stations by horizontal houl using standard plankton net. In the study, totaly six species were found. Annual average abundance of Cladocera in the Erdek Bay was calculated as 734,89 ind./m ^{3} and total abundance of zooplankton consisted of 29.7% of Cladocerans. Cladocera reached maximum abundance in the summer.

Key words: Cladocera, Abundance, Marmara Sea

Introduction

Marmara Sea plays an important role as an acclimatization zone, a biological corridor or a biological barrier on the spreading of marine fauna and ?ora between the Mediterranean and Black Seas. Regarding the coastal artisanal fishery, Erdek Bay has a significant importance in the Marmara Sea. According to the researchers (1, 2) coastal areas of this bay are suitable breeding and nursery grounds for the larvae and juvenile fish. Marine zooplankton has a important role in the food chains of the sea as they transfer energy from the phytoplankton to higher trophic levels. Marine cladocerans predominate mainly in coastal ecosystems and contribute significantly to zooplankton abundance. For that reason we aimed to determine their abundance and contribution to total zooplankton.

Methods

Samples were collected from eight stations horizontally (Fig. 1) and monthly intervals with 115 µm mesh size standard plankton net and results were evaluated seasonally (Table 1).

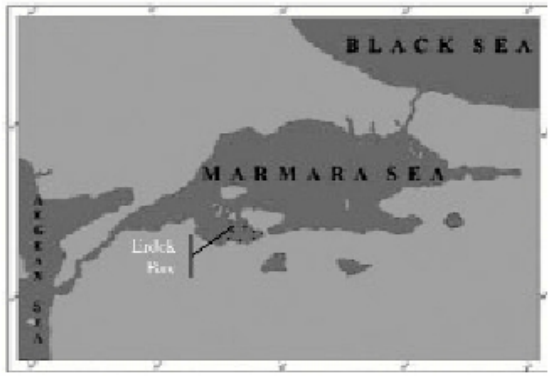

Fig. 1. Study area.

Table 1. Seasonal average abundance (ind/m^3)of species of Cladocera, total Copepoda and other zooplankton (Chetognatha, Appendicularia, Annelida, Bivalve veliger etc.).

	Summer	Autumn	Winter	Spring
P. avirostris	360.75	39.75	0.13	0.13
E. tergestina	268.75	5.25	-	-
E. spinifera	0.13	0.75	-	-
E. nordmanni	-	0.13	-	22.75
P. polyphemoides	0.75	0.63	1.88	32.63
P. intermedius	-	-	-	0.5
Total Cladocera	**630.38**	**46.51**	**2.01**	**55.51**
Copepoda	**44**	**558.25**	**294.75**	**153.00**
Other	**71.27**	**184.02**	**293.90**	**185.26**
Total zooplankton	**745.65**	**788.78**	**590.66**	**394.27**

Results

Six species of Cladocera have been determined in the Erdek Bay:
Penilia avirostrisDana, 1849
Evadne nordmanniLovén, 1835
Evadne spiniferaMüller, 1868
Evadne tergestinaClaus,1877
Pleopsis polyphemoidesLeuckart, 1859
Podon intermediusLilljeborg,1853
P. avirostrisand E. tergestinawere found dominant in summer while P. polyphemoidesand E. nordmanniwere found in spring. Other species of Cladocera were found rarely in all seasons. As it can be seen from table 1 there is a negative correlation between Cladocera and Copepoda (r: -0.65, P<0.05).

Discussion

Study results showed that Cladocerans contribute significantly to zooplankton abundance. Some researchers reported that P. avirostris, *E. tergestina*, *P. polyphemoidesand E. nordmanniappeared highly* concentrations in stagnant and polluted waters (3,4). For that reason Erdek Bay should be observed periodically.

It can be seen that there is a competition between Copepoda and Cladocera (r: -0.65, P<0.05). Similar results reported by Tarkanet al. (5). We think that interactions between Copepoda and Cladocera affected seasonal variation of zooplankton.

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