

The annual cycle of zooplankton in Elefsis Bay (Greece)

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Summary In this paper we have studied comparatively the zooplankton at a) the very polluted Elefsis bay and b) a relatively non polluted area (25 Km southwards). The plankton population of the two areas differs both quantitatively and qualitatively. The Elefsis bay population is more abundant and has a reduced species diversity. Differences exist also in the list and abundance of dominant species. Elefsis bay is a semiclosed embayment situated at the northern part of Saronic gulf (gulf of Athens). This area is heavily polluted by sewage, oil and unspecified wastes from chemical industry. A systematic study of the hyponeustonic and superficial (0-100cm) layer at the entrance of Elefsis bay at Keratsini, has already been performed (Moraïtou-Apostolopoulou, 1978).

In this paper we refer results of the systematic study of the two main constituents of zooplankton in Elefsis bay: Copepods and Cladocerans. 18 samplings (180 μ net) were performed simultaneously in biweekly intervals (between 25-8-77 and 26-7-78) at two stations one at about the center of Elefsis bay and another at a relatively non polluted area 25 Km southwards.

Elefsis bay has lower temperatures and similar salinity scales in comparison with that of the non polluted area and strong eutrophication conditions (as demonstrated by nutrient values). The plankton population of the two stations differs both quantitatively and qualitatively. The Elefsis bay population proved much more abundant (with an annual average of 9.224 indiv./m³), than the south Saronic population (average 1.287 ind./m³). Furthermore the south Saronic population presented a higher species diversity (eg. 42 species of Copepods identified) than the Elefsis (16 species identified).

Copepods and Cladocerans constitute the main zooplankton constituents forming the 97,5%(Elefsis) and 94,6%(south Saronicos) of the total numbers of zooplankters.

The list of dominant species and their abundance differs markedly in the two stations: total ayer. (ind./m³)

	total ayer. (ind./m ³)		total ayer. (ind./m ³)		
south Saronic.	Acartia clausi	435	Oithona nana	2.864	
	Clausocalanus furcatus	160	Elefsis bay	Penilia avirostris	1.926
	Paracalanus parvus	127		Evadne nordmani	1.755
	Oithona nana	126		Acartia clausi	1.488
	Podon intermedius	97		Paracalanus parvus	1.305
	Oncaea media	81		Evadne tergestina	1.105

The zooplankton annual cycle in Elefsis showed remarkable changes in periodicity(maximum abundance occurred in the period July-September followed by consequent decreases and increases in the population size during the rest of the year).In the south Saronicos it was characterized by a period of lower abundance(May-October) followed by an increase(November-March).

Due to the mesh size(180 μ) some small species(Oithona nana,Oncaea media,Euterpina acutifrons)scarce in previous samplings(220 μ net), were abundant.

References

Moraïtou-Apostolopoulou,M.(1978) Contribution à la systematique et Ecologie du zooplancton de surface(0-100cm) dans une zone polluée.Biologia Gallo-Hellenica VII(42) :201-208