

SEASONAL CHANGES IN THE FAUNA OF A BRACKISH-WATER LAGOON

A.Nicolaidou, M.Karakyre and V.Trichopoulou

Zoological Laboratory, University of Athens,
Panepistimiopolis, 15701 Athens, Greece.

ABSTRACT: Seasonal changes in the benthic fauna were studied in the lagoon Mazoma of the Amvrakikos Bay. Important changes occurred not in the species composition but in population densities related to the life cycles of the species. Biomass and diversity were not correlated with vegetation, while numbers of species and density showed positive correlation with it.

The study area, Mazoma, is a shallow brackish water lagoon in the Amvrakikós Bay. The bottom is muddy covered in places by Zostera noltii and Chaetomorpha. Its benthic fauna belongs to the biocoenosis of eurythermic and euryhaline lagoons (Nicolaidou and Karlou 1983). This paper presents the seasonal changes in the fauna at six stations. The samples were collected in June and September 1981 and January and May 1982.

Over the whole area and for the period of the study 55 species were identified. In June 39 species were present, 36 in September, 36 in January and 40 in May. The species composition did not change considerably with time. Greater changes were observed in the density of some populations in relation to the life cycles of the species. Platynereis dumerili, for example, showed a tendency to decrease in numbers from June (average density 377 indiv./m²) to May (a.d. 3 indiv./m²), its settlement taking place at the beginning of summer. Recruitment of Abra ovata between October and January explains its continuous increase in density

which almost ceased in May. The average densities for the four seasons were 300, 557, 720, and 760 indiv./m². The numbers of Idotea baltica decreased from June (a.d. 107 indiv./m²) to January (a.d. 17 indiv./m²) to rise again to much higher levels in May (a.d. 393 indiv./m²), reflecting new settlement. The population of Mytilaster minimus remained stable throughout the year and only decreased dramatically in May (a.d. 3397, 3577, 3170, 747 indiv./m²). Study of its life cycle in the lagoon showed a continuous recruitment from June to January.

The average biomass increased from June (7.40 g DW/m²) to January (27.44 g DW/m²) and then decreased in May (22.13 g DW/m²). The changes in the biomass largely reflect the growth in size of Mytilaster minimus and Abra ovata and the sudden decline of Mytilaster minimus. The above two species were important components of the biomass and in some occasions they contributed as much as 83% and 79% respectively of the total biomass.

The values of the Shannon-Weaver diversity index were not very meaningful as such. However, plotting the seasonal changes for each station revealed that in most stations there was a decrease of diversity between June and September followed by a continuous increase until May.

Neither diversity nor biomass showed significant correlation with vegetation expressed as grams of dry sea-weed per square metre. On the contrary, the number of species and the number of individuals was positively correlated with the floral biomass.

REFERENCE

- Nicolaidou, A. and C. Karlou, 1983. A benthic survey in the brakish-water lagoon Mazoma of the Amvrakikos Gulf. Rapp. Comm. int. Mer Medit. 28 (6) :235-236 .