

Relationship between the physico-chemical parameters and the macrobenthic fauna in the soft substratum of the Homa Fisheries Lagoon

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Homa fisheries lagoon is located between the Gediz River and the Çamaltı Salthern (Fig. 1). Its consists in two basins: the basic fisheries lagoon (7 Km long, 5 Km wide and 1200 Ha surface) and a smaller and shallower basin (3.4 Km long, 1.2 Km wide and 300 Ha surface).

This investigation was carried out in the basic fisheries lagoon which has a maximum depth of 0.8 m and a mean depth between 0.4-0.5 m. There are three gates which connect the lagoon to the sea, but only one of them is working now.

Physicochemical data and benthonic samples have been taken at 5 stations seasonally (January, March, July and September) during three years, 1989-1991. The following parameters were measured: temperature and salinity (portable thermometer, Mohr-Knudsen method), pH (Varila pHmeter) and dissolved oxygen (Winkler method).

Sediment samples were taken by means of a Van Veen Grab that can hold 3.3 l of sediments. For each sampling date and station, 10 l of sediments were collected. Organisms were separated by sieving through a 2 mm mesh and fixed with 10 % formaldehyde. The results of the study of the benthonic samples are shown in Tables 1 and 2.

Table 1. Total number of individuals and species for each sampling station found in the 12 samples taken during 1989-91.

Stations	N°species	N°individuals
1	22	2630
2	20	3747
3	15	6570
4	16	5888
5	14	5071

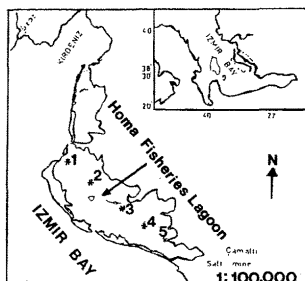


Figure 1. Sampling stations.

The ranges of the measured physico-chemical parameters were: temperature 5-26 °C (Fig. 2, A), salinity 34.51-73.54 ppt (Fig. 2, B), pH 6.94-8.40 (Fig. 2, C), dissolved oxygen 4.4-11.6 mg·l⁻¹ (Fig. 2, D).

At the end of the studies, maximum salinity 73.54 ppt and minimum dissolved oxygen 4.4 mg·l⁻¹ have been found. The numbers of species and individuals change depending on the station and season. Some species number decrease, some species number increase (*Abra pellucida*, *Chironomus* sp.) especially in the summer months. In addition, we observed the blooms of *Lynghya macuscuta*.

Table 2. Total number of species and individuals found for each taxonomic group in Homa fisheries lagoon.

Tax. Groups	N species	N individuals
Polychaeta	13	204
Mollusca	7	11364
Crustacea	9	908
Diptera (Larvae)	1	11438
Total	30	23914

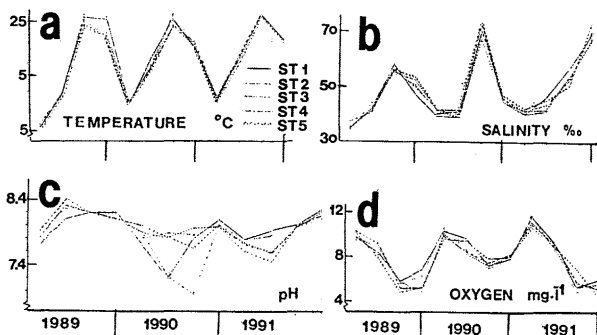


Figure 2. Physico-chemical parameters in Homa fisheries lagoon

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