

## **İzmir Bay Marine Research**

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### **Abstract**

Due to the rapid increase in population density and industrialization, İzmir Bay has become increasingly polluted, especially during the last three decades. The pollution intensity in İzmir Bay decreases gradually towards the opening section of the bay allowing its other parts to retain a level of biological richness that is almost as high as in previous periods. The reduction of biological diversity, periodical red-tide events and the monotonous species distribution of marine fauna and flora in the Inner Bay are the consequences of this ecological destruction. The inner part of İzmir Bay has been a focus of concern in the whole Mediterranean since 1960, at which time a rapid increase in pollution has begun to be observed. From this point of view, it is a subject of high priority regarding the environmental protection in Turkey. Many natural and anthropogenic fluxes that determine the ecological state of the bay have been recognised. They are given as follows:

- a) Loads originating from domestic wastewater produced by a population of approximately 3 million people,
- b) Loads coming from industrial waste waters,
- c) Loads brought by streams and the Gediz River,
- d) Loads brought by the precipitation on the urban area and the catchment basin of the bay,
- e) Loads originating from the chemical compounds used in agriculture such as, pesticides, natural and artificial fertilisers which are washed out from the surface and carried by the drainage waters of agriculture activities in the basin of the bay,
- f) Pollutant loads originating from port activities and maritime traffic,
- g) Loads coming from the atmosphere to the surface of the bay,
- h) Loads up-fluxing from bottom sediments into the water column,
- i) Material transferred from/to the open sea.

Institute of Marine Sciences and Technology has monitored the present situation in İzmir Bay since 1994. İzmir Metropolitan Municipality has supported this monitoring project since 1996.

The objective of this project is to collect monthly data such as; CTD, nutrients, TSS, plankton, macrobenthos, heavy metals in the sediments and organisms, faecal coliform. These data are required for the recovery and prevention of pollution in the bay, which is an important resource as a consequence of its economical, commercial, cultural and recreational potential. This database has also been serving as a basis for the ecological model studies.