

## Abstract

Hydrology and Hydro-biological monitoring in the Northeast Persian Gulf and strait of Hormuz (Hormozgan Province waters) were conducted during 2003-2004. The project was implemented using R/V Ferdous. The sampling area included the stretch of the Iranian waters along the northeast part of the Persian Gulf and Strait of Hormuz in Hormozgan province. Along this stretch 7 equally distributed transect at a distance of 40 miles from one another were designated ; 3 main sampling stations at a distance of 20 miles from one another were fixed at each transect. Sampling was conducted twice per annum from Feb . 2003 to Feb. 2004. Summer & winter values of some Physico-chemical factors in surface layers of Hormozgan waters were recorded as follows: Temperature  $33\pm 0.082$  ,  $21.8\pm 0.67$  °c ; EC  $66.1\pm 1.52$  ,  $53.3\pm 0.66$  ms/cm ; Salinity  $37.9\pm 0.54$  ,  $37.8\pm 1.6$  ppt , Density  $22.9\pm 0.39$  ,  $25.5\pm 0.99$  kg/m<sup>3</sup> , Dissolved oxygen  $5.4\pm 0.26$  ,  $6.7\pm 0.35$  ppm ; pH  $8.2\pm 0.02$  ,  $8\pm 0.03$  ; chlorophyll-*a*  $0.7\pm 0.4$  ,  $1.3\pm 0.72$  mg/m<sup>3</sup> and Turbidity  $6.1\pm 0.92$  ,  $5.7\pm 0.67$  FTU.

According to the result a seasonal thermocline appears in the Iranian waters during summer and disappear during winter, extended with its maximum formation in summer . The temperature differences between surface and bottom waters was 12°C. The thermocline diminishes near the Strait of Hormuz area, horizontal and vertical distribution recorded. Increase in salinity and density from northeast towards northwest and from surface to depth. Electrical conductivity depends on temperature in summer but in winter depend on salinity. Dissolved oxygen was higher in the layer of 5-20m and decrease with increasing depth. Maximum chlorophyll-*a* was recorded in layers of 10-30m and 5-20m in summer and winter respectively. The density of nutrients increase from surface to depth but decrease from northeast towards northwest and density of nutrients in winter was higher than summer show write how much.

Plankton population in this study characterized by 4 phylum and 5 classes of phytoplankton, 6 phylum and 8 classes of zooplankton and 23 family of Ichthyoplankton. Total 63 species of phytoplankton belonging to 43 *Bacillariophyceae*, 14 *Dinophyceae*, 4 *Cyanophyceae*, one *Chrysophyceae* and one *Euglenaphyceae*. *Bacillariophyceae* in particular show very high density in winter 83 and *Euglenaphyceae* is dominant group only in winter. Crustaceans were the most dominant group of zooplankton. Calanoids and Cyclopoids were abundant at all stations. Zooplankton were increase from East to West. Among Ichthyoplankton, Clupeiidae family the most abundant, the Gobiidae was in second position and followed by Engrauliidae with high density than other family.

All together 124 genera belong to 132 families of macro-benthos were identified. As they consist of 59 genera belong to 49 families of *Polychaete*, 27 genera belong to 44 families of gastropod, 23 genera belong to 27 families of Bivalve, 15 genera belong to 10 families and 2 order of *Crustacean* and 2 families of Scaphopoda. Additionally some groups of *Echiurida*, *Sipunculida* , *platyhelminthes*, *Echinodermata*, *Foraminiferans*, *Cnidarians*, *Chordata*, *Cheato gnatha* and *Lophophora* were identified. The most dominant groups were Crustacean and Polychaetes in percentage of abundance proportion of studies in last years . The mean biomass of macrobenthos has been decreased to 4.7 g/m.

Note: Some species of macro-benthos identified up to family

Key words: CTD, Persian Gulf and strait of Hormuz, macro-benthos, phytoplankton, zooplankton, Ichthyoplankton, Nutrients, chlorophyll-*a*, seasonal thermocline,