Distribution and Abundance of Phytoplankton in Helleh River Estuary (Persian Gulf-Iran)

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Abstract

Estuaries are one of the most productive aquatic ecosystems that both ecologically and economically are important. The study purposed to investigate the distribution and abundance of phytoplankton from Helleh river estuary (Boushehr-Persian Gulf). Samples were taken in mid-season from summer 2011 to spring 2012 for one year period. Results showed that the dissolved oxygen, temperature, salinity, pH and the visible depth of Secchi disk were varied in the range of 6.45-12.25 mg/l, 13-34.4 ^{o}C, 9-45 ppt, 8.04-8.23 and 40-55 cm, respectively. The phytoplankton community comprised of Ochrophyta (3 classes, 17 families, and 22 genera), Myzozoa (1 class, 6 families, and 8 genera), Cyanophyta (1 class, 2 families, and 2 genera), Chlorophyta (2 classes, 2 families, and 2 genera) and Haptophyta (1 class, 1 family, and 1 geneus). All samples were dominated by Ochrophyta, especially Bacillariophyceae class. The range of phytoplankton abundance were obtained 2266.7-13533.3, 4933.3-11866.7, 2066.7-9266.7 and 1333.3-28666.7 cells/L in summer, autumn, winter and spring, respectively. In addition, there were significant correlation between phytoplankton abundance with pH ($r= 0.57$, $P<0.01$) and salinity ($r= 0.52$, $P<0.05$). This study showed that Bacillariophyceae (diatoms) was the important class of phytoplankton in Helleh estuary and also the pH and salinity were the most important environmental parameters for phytoplankton distribution and abundance.

Keywords: Phytoplankton, Abundance, Distribution, Helleh estuary, Persian Gulf.

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