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Ecobiolgical Study of Mazandaran Coastal Water of the Caspian Sea (2012-2013)

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Abstract

This study was conducted to determine some of the environmental parameters, phytoplankton abundance and diversity, and their temporal fluctuations in the Mazandaran coastal waters of the Caspian Sea. Samples were collected from surface waters from 5m to 30 m depth in 2012-2013. Results showed that the mean values of water temperature, salinity, transparency, pH and dissolved oxygen were 19.46±0.85ºC, 12.35±0.13 psu, 2.63±0.18 m, 8.51±0.02 and 6.00±0.07 ml/l, respectively. Percentage of dissolved organic nitrogen and phosphorous were higher than 80% and 46, respectively. The mean value of dissolved silicon (DSi) was 9.5± 0.2 µM. In addition, the results showed that 112 species contributed in phytoplankton community structure. Mean abundance of phytoplankton was 164 ±32 million Cells/m^3. In January and March, the mean abundance of phytoplankton was 5 times higher than other months. Bacillariophyta with 89 percent of total abundance was the dominant phylum and Pyrrophyta was the second one. The third and fourth dominant phyla were Cyanophyta and Chlorophyta, respectively. *Chaetoceros throndsenii* was the first dominant species in May, June and August. However, the first dominant species in November, January and March were *Thalassionema nitzschioides*, *Skeletonema costatum* and *Pseudonitzschia seriata*, respectively. Statiscal analysis showed that temporal biotic and abiotic parameters were significantly different. Meanwhile, Pearson correlations test indicated the significant correlation between water temperature and phosphorous, nitrate and ammonium ions and major dominant species of each month. The environmental stress and instability of ecosystem were a benefit to species with blooming potential such as *Chaetoceros throndsenii* and *Pseudonitzschia seriata*. They increased their abundance in favorite water temperature and nutrients.

Keywords: *Environmental parameters, Phytoplankton, Bloom, Caspian Sea, Mazandaran Province.*