

Trend of Macronutrients Fluctuation of Water in the Iranian Coasts of Southern Caspian Sea

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Abstract

This study was conducted to nutrient concentrations of water in the southern Caspian Sea waters during four seasons at 8 transects (Astra, Anzali, Sefidrud, Tonekabon, Nowshahr, Babolsar, Amirabad and Bandar Turkman) during 2009-2010. 480 samples were collected at different layers of water and then analyzed based on standard methods. Annual concentration of inorganic nitrogen (DIN= NH₄⁺, NO₂⁻, NO₃⁻) has a fairly wide variation. Percentage of nitrogen components out of DIN were varied 9-98, 0.2-28.2 and 0.0-90.0 respectively. In this study, percentage of DIN was lower than 15% and organic nitrogen (DON) was higher than 80%. Overall, results showed that DON was recorded lower than the previous study (2008), but NH₄⁺, NO₃⁻ and DSi were higher than the previous sampling period. Inorganic phosphorous (DIP) and NO₂⁻ have not changed substantially. N/P ratio of Caspian Sea has a narrow range which order of magnificent lower than other seas. The results of the present study showed that Caspian ecosystem was nitrogen limitation (N/P<10) before introduction of *Mnemiopsis leidyi*, while it seems that after introduction of *Mnemiopsis leidyi* the system has been shifted to the phosphorous limitation (N/P>20).

Keywords: *Macronutrients, Water, Iranian Coast, Caspian Sea.*
