Ecological and biological indices of macrobenthos in the estuary of Shirud River

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Abstract
Estuaries are the main crossing areas between rivers and sea ecosystems. The Shirud River is located in the west of Mazandaran province. Sampling of sediments was done monthly for one year (Jul 2012- Jun 2013). Five stations were sampled, includes two stations in upper part, one station in delta of estuary and two stations in the sea. Environmental parameters such as salinity (ppt), pH, water temperature (C°) and depth (cm) were recorded in any station. 5182 number macrobenthos were counted; there were recognized 36 genera, 25 families and 15 orders. The most abundant recorded for Obesogammarus sp. as 36%. In accordance with the results, salinity and depth of water affect the density of Macrobenthos ($p<0.05$), however pH did not effect on density and diversity, though ($P>0.05$). Also temperature changes cause modifications in density and diversity among different species of Macrobentozes during different months, so that the most and least density were recorded during July and January, respectively. The most and least diversity were shown during September and March ($p<0.05$). In average the most live mass was realized in August (1.61 gr/m2) and the least live mass was for March (0.03 gr/m2). The average ecological indices results are as follows: Shannon-Wiener 0.83; Simpsons Dominance 0.48 and Margalef Richness 2.42, there were a significant difference between indices during different months in a year ($P<0.05$) .

Keywords: Macrobenthos, Distribution, estuary, Shirud River, Caspian Sea.