

Study of Polychaete community structure and it's relationship with heavy metal concentration in winter in Bahrakan zone sediments

Safahieh, Alireza; Mohammadi, Motahareh

Khoramshahr University of Marine Science & Technology

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Abstract

The muddy coast of Bahrakan is a location for catching different fish and prawn species and is known as important fishery site in Khuzestan province. This area is exposed to various types of pollutants which may affect invertebrates as well as their community. In order to determine distribution and diversity of polychaets and heavy metals concentration in Bahrakan province sediment, sampling performed in winter 2008. Samples of sediment were taken from 5 different station and polychaets after washing and coloring, identified at genus or species levels. The chemo physical factors were measured in different station. In addition to, concentrations of heavy metals were measured in sediments using Unicam AAS model 919. Results showed that the means of polychaete were 2606 individual per m² and polychaete community was dominated by Syllidae (40%), Nephtyidae (20%) and Cossuridae (14%). Means of temperature, dissolved oxygen, salinity, pH, organic matter and percent of silt-clay were 10.8°C, 10.4 mg/l, 37.9 g/l, 8.2, 16.5% and 97.6 in different station respectively. The highest heavy metals concentration and lowest polychaete density was found in the station located at the mouth of Zohreh estuary. Probably due to river discharge of contaminations was the reason of decreasing polychaets density. Significant correlation was found between polychaete dominance and Cu concentration in sediment. Increasing of Cu concentration in sediment could result in decreasing of polychaets diversity and decreasing of dominance.

Keywords: polychaets, heavy metal, Bahrakan sediment, pollution
