Investigation of diversity, composition, abundance and species density of macrobenthic communities in Nayband Bay (Persian Gulf)

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Abstract

In this study, the diversity, composition, abundance and species density of macrobenthic communities in Nayband Bay (Persian Gulf) have been investigated. Sampling was done from 20 stations in winter of 2018. The aim of this study was to investigate the composition of macrobenthic groups in different parts of Nayband Bay. From each station, 4 sediment samples with 3 replicates, totally 60 ones using Van Veen Grab to investigate and identify macrobenthos were collected. Identification of macro benthos and other experiments, according to MOOPAM standard, were carried out in the trusted laboratory of Environmental Organization. The data was analyzed by special ecological software (Biodiversity Pro 2, PRIMER 6) and common statistical ones (SPSS 22). In the whole stations, totally 49 different taxon (genus and species) belonging to 39 families and 8 classes of macro benthos were identified. The class of Polychaeta, including 23 taxon, had the most diversity. After the group, Malacostraca, Bivalvia, Gastropoda and other phylum and classes (Echinozoa, Holuthroidea, Insects) with the least one taxon are ranked. The average dispersion of macro benthos in the studied area was determined 1741 ± 130.77 ind/m^2. The maximum value of dispersion was reported 2798 ± 70/20 ind/m^2, in the station near Nayband cape and the minimum one was recorded 489.7 ± 2.64 individual/m^2, in Assaloye Station. Since the majority of polluted stations were located in the vicinity of Assaluyeh region and the data obtained from pollutants measurement, a kind of pollution gradient and flow from the facilities of South Pars Energy Special Economic Zone to the inside of Nayband Bay can be shown with probability. Very high claimed that the pollution of industries located in the South Pars region is the main factor in the changes of macrobenthic communities in Nayband Bay and therefore taking corrective measures can prevent the destruction of this valuable ecosystem.

Keywords: Nyband bay, Macrobenthic community, Ecologycal indicators, Industrial pollution.