

BIODIVERSITY OF ICHTHYOFAUNA IN THE COASTAL WATERS OF THE ZMIINYI ISLAND IN 2004-2010

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Studies of biodiversity dynamics under anthropogenic pressure are of unquestioned timeliness. Their analyses enable us to assess interaction of natural and anthropogenic processes in a water-body, determine level of environmental pollution, elaborate and test modern methods of to assess the state of ecosystem, forecast probable changes in natural communities [1-3].

The objective of this work is to study ichthyofauna biodiversity around the Zmiinyi Island using different indices.

The material used had been collected processing ichthyological samples from the coastal waters of the Zmiinyi Island during the period from 2004 to 2010.

Studying the diversity of ichthyofauna we used three indices of communities' species composition, calculated according to generally accepted formulas: Margalef's species richness [4], Shannon's total diversity index [5] and Pielou's evenness index [6]. The indices were calculated coming out of number.

Altogether 52 fish species belonging to 12 orders have been found near the Zmiinyi Island. The fish registered during our studies during the island made 68% of the total number of species living in the Danubian region of the Black Sea or approximately 60% of all fish species registered in the North-Western Black Sea.

It is pointed out that increase of commercial fishery pressure on the area around the island in 2007 and 2008, as well as scheduled coast-strengthening and construction of hydrotechnical facilities in the period from 2006 to 2008 had resulted at decrease in fish species diversity near the Zmiinyi Island. Margalef's species richness index decreased almost twice in 2009 compared to 2005, Pielou's evenness index decreased 1,3 times, Shannon's total diversity index – 1,5 times. In 2010 after the construction activities stopped the values of those species; diversity indices grew insignificantly.

That is why the main condition of unique fish species diversity restoration is prohibition of any activities both on the island and in its coastal waters, as well as establishing on the island a high-technology laboratory for restoration of rare and disappearing fish species in the Black Sea. At that, keeping in mind convenient geographical position of the island, its significance for genetic fund of the entire North-Western Black Sea restoration is important for all the riparian countries.

Literature

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