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Assessment Of Biological Diversity Of The North Caspian

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Biological diversity was assessed according to the data of observations of the number, biomass and species composition of phyto- and zooplankton throughout the period 2001-2011 in the shallow area of the North Caspian which is largely affected by the Volga runoff and by economic activities. The research objective was to determine characteristics of biological diversity typical of the area under study and the factors affecting its dynamics. Each of the three biodiversity components – species dominance, abundance and diversity – was estimated by means of at least three indices and/or scales. Long-term observation data show that no more than 3 species (more specifically, 1 or 2) can be dominant and sub-dominant in the phyto- and zooplankton of the North Caspian. The change of dominant species depends on the season and changes of water salinity. Plankton species abundance is not constant; it changes from year to year and depending on the season. There was not a trend in the changes of phytoplankton species abundance, while species abundance of zooplankton decreased within the period under consideration, which was most likely caused by the impact of mnemiopsis. Plankton species diversity is not constant as well; it changes depending on the season and hydrological conditions. A slight trend in the reduction of zooplankton species diversity is traced only in autumn, as mnemiopsis emerges in the Caspian Sea in the end of summer – beginning of autumn. The correlation of biodiversity indices with the level of marine environmental pollution with some persistent and non-persistent organic pollutants and heavy metals was discovered. No correlation of biological diversity with complex indices of marine environmental quality was revealed. Keywords: North Caspian, biological diversity, mnemiopsis, marine environmental pollution