



Antropogenic Factors of Azov Sea Bioproductivity Transformation: Ecological History of Industrial Epoch

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Abstract: The problems of marine areas anthropogenic transformation are priorities of all coastal states. The Azov sea has the unique physical and geographical conditions that predetermine the peculiarities of marine resource usage. This is the smallest sea of the world ocean (37,800 km²), the shallowest (depth is not more than 14 m), with insignificant salinity (about 13-14%), but it has very high biological productivity (up to 40 kg ha⁻¹ of the water area) and biosphere value. The industrial era of Ukraine and Russia development in the Soviet Union, which began in the middle of the twentieth century, has led to a radical transformation of the physical and geographical conditions that affect the Azov sea resources formation. The changes that took place in the hydrological, and then in the biological processes of the Azov sea, far exceeded the limit of adaptation of a significant number of existing fish there, which led to a sharp reduction in their number and even death. As a result of the research, the interdependence of the hydrological and hydrochemical regimes of the Azov sea and the increasing role of anthropogenic factors in the functioning of the marine ecosystem, transformation of biological productivity and disturbance of its equilibrium have been established. It is proved that at the current level of urbanization, industrial and agricultural production in the Azov sea basin the reproduction of biological resources at the level of 30-50 ies of the twentieth century is impossible. The factors confirming this conclusion were substantiated: 1. Salinity is an important criterion, the existence and reproduction of certain ecological groups of fish depends on its level. The level of salinity is an integral indicator of the Azov sea water balance, the incoming part of which is almost completely controlled by water users of the Russian Federation, located in the basins of the Kuban and Don rivers. 2. Hydrotechnical structures with long service life (primarily Tsimlyanska HPP, Russian Federation) interfere with the normal spawning migration of valuable Azov fish. 3. Reduced river flow (especially in spring and summer), which formed in 95% on the Russian Federation territory and reduced almost three times the number of primary biomass and affect the maintenance of the food base of fish fauna of the sea significantly.

Keywords: Azov sea, Anthropogenic transformation, Bioproductivity, Hydrological regime, Fish resources
