

ASSESSMENT OF THE FUNCTIONALITY OF AQUATIC ECOSYSTEMS FROM THE REPUBLIC OF MOLDOVA

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Introduction. Currently, the quantity and quality of inland waters have been already recognized as a major global and direct threat to human health, being one of the most pressing human problems, including the human right to safe drinking water. **Material and methods.** In the process of investigation, expeditions were made in order to conduct complex assessment of aquatic ecosystems in the hydrographical basins of the Dniester and Prut rivers, including expeditions, investigations *in situ* and laboratory modelling were performed. Determination of the quality of water was carried out in accordance with ISO standards adapted to national ones and summarized in recently developed and published 4 guides (<http://zoology.md>) The multi-annual materials of the Institute of Zoology have also been systematized. **Results.** The European directives developed several environmental issues, but the majority of population and authorities at different levels focus, primarily, on that of pollution. According to WHO (Programmer on Chemical Safety, 1992), out of over 6 million known chemical compounds, up to 500 thousand compounds are practically used; about 40 thousand of them are harmful to humans, and 12 thousand are toxic. This is a problem of global importance that requires ecotoxicological investigations about migration of heavy metals, POPs, and other toxic and hazardous substances in aquatic ecosystems. But, less attention is paid in Community regulations to the assessment of the functionality of aquatic ecosystems. This means that the monitoring program of the functionality of River ecosystems, such as the running water bodies, refers, particularly, to the assessment of the volume and level or water discharge, the speed of water flow, the amount of suspended substances and alluvium. Since these data are important for evaluation of the ecological and chemical state of the rivers, these parameters determine the balance in the "water-suspensions-silts" system and the ecological potential of the rivers. In some cases, like the Dniester River, the impact of DHPC is marked by sudden daily fluctuations and lowering of the water level to the bottom of the river, as well as by the imbalance of thermal and gas regime. The water flow volume has an obvious tendency to decrease downstream of Naslavcea. The decrease in the content of suspensions of mountain origin resulted in the intensification of the swamp process, the modification of the chemicals migration processes, the decrease of the buffer capacity and the increase of the secondary pollution of the Dniester River. **Conclusion.** Multi-annual investigations have allowed proposing the exclusion of hydropower complexes from the list of so-called "green enterprises", because they destroy the functioning of the river ecosystems. Construction of pumped storage hydroelectric power plants (PSHPP) on large rivers, which are the main source of drinking water and used in fish farming, should be banned, as they destroy all water organisms and damage the functioning of lotic aquatic ecosystems.

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