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Assessment of Zhinvali Reservoir by Bioindicators (Georgia) - Preliminary study

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ABSTRACT

One of the most significant issues facing the world is the providing of fresh water to populations and the preservation of water ecosystems. Both human health and ecosystem biodiversity are at risk from contaminated water. Georgia is required to monitor and conduct research on water bodies in accordance with the Water Framework Directive (WFD 2000/60/CE). Zhinvali reservoir was created in 1985 by damming of Aragvi River. Research of zoobenthos and primary production of plankton in Zhinvali was conducted in 1989-1990. Despite the significance and multipurpose use of Zhinvali water reservoir, no comprehensive hydrobiological and parasitologic research has been carried out before presented study. Our study, the first phase of a three-year initiative that began in May 2024, offers important new information about the relationship between the reservoir's fish community and parasite fauna. Turbidity, EC, dissolved oxygen, salinity and pH were measured at sampling point on site. Inorganic contaminants and sulfates are present in low concentrations, hydrocarbonates and chlorides are present in medium concentrations, magnesium ions predominate, and oxidizability is 2.5 times higher than what is considered acceptable for fish. Given the development and recreational activities along the reservoir's coast, a rise in pollution levels is to be predicted.

Keywords: bioindicator, water quality, drinking water reservoir, monitoring

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