

Lake Ohrid tributaries: Natural and potential pathways for invasive alien species introductions

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The role of the four tributaries (rivers Sateska, Koselska, Grasnica and Cerava), together with the only outflow (River Crn Drim) is rather considerable regarding the sustaining of the water balance of Lake Ohrid. Since the early 1970s, with the intensification of the industrial development in the watershed of the lake, until present times, the negative influence of the tributaries concerning the water quality and habitat destruction in the littoral of the lake has been identified. However, until recently, neither the tributaries, nor the outflow were considered as factors that can directly assist the introduction of alien and invasive species.

The goal of the research was to determine possible existence of alien or invasive macrozoobenthic species in the mentioned water flows, and the existence of potential vectors and conditions for their introduction. By applying the WISER method, samples from different sites throughout the water flows were collected, according to the following criteria: upper flow, middle flow and inflow in the lake; the different anthropogenic impact reflected in the changes in water quality and habitat changes.

A total of 54 taxa from 8 groups (Turbellaria, Oligochaeta, Hirudinea, Bivalvia, Gastropoda, Amphipoda, Isopoda and Insecta) were registered in a total of 19 localities from 7 water flows in the Macedonian part of the watershed of Lake Ohrid. The largest number is classified under the group of Insecta and it is characteristic for the upper flow of the Sateska

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River, where there were no visible disturbances of the habitat. Unlike the condition in the upper flow of the Sateska River (characterized by “very good” ecological status), the inflows and middle flows of the other rivers indicated disturbed trophic state of the water and “bad” or “very bad” ecological status (Cerava and Grasnica Rivers). Although macrozoobenthos alien species were not registered during the research, the natural location of the tributaries and the increased frequency of anthropogenic activities in the watershed of the lake, as well as the existence of localities with “bad” ecological status and disturbed (destroyed) habitats, indicated the need of continuous monitoring for the occurrence and introductions of potential invasive alien species in the watershed of Lake Ohrid.

Keywords: Lake Ohrid watershed, macrozoobenthos, ecological status, alien species.