

Community structure and diversity of macrozoobenthos in the Meshtitsa Reservoir (South-western Bulgaria) after refilling up

PETYA BORISOVA, STEFAN STOICHEV, YORDAN UZUNOV

*Department of Aquatic Ecosystems, Institute of Biodiversity & Ecosystem Research,
Bulgarian Academy of Sciences
1113 Sofia, 2 Gagarin Street
E-mail: petya_ecolab@abv.bg*

Five investigations of bottom invertebrates were carried out between April 2011 and January 2012 in Meshtitsa Reservoir. These studies explored the status of macrozoobenthic communities and focused particularly on their response to ecological changes after the artificial drainage of the reservoir in September 2010.

A total of 35 species belonging to Oligochaeta and Chironomidae were recorded. Most dominant in April were *Limnodrilus hoffmeisteri* (pF = 100%), *Tubifex tubifex* (pF=75%) and *Chironomus gr. riparius* (pF=75%). In June and August, no dominant species (pF > 70%) were found. In October, the absolute dominant was *Dero digitata* (pF=100%) followed by *Nais pardalis* and *Chironomus gr. riparius* with the same values (pF=75%). Throughout the entire period, no consistently dominant species was found. A possible explanation could be the unstable structure of the macrozoobenthos community in the reservoir during the period of investigation. Another reason could be that 12 of the 35 recorded species were observed only once.

The dendrogram analysis shows low similarity in species between the sites, which indicates that the macrozoobenthos communities were unstable.

The species diversity index (H) in Meshtitsa Reservoir ranged from 0.500 (site 4, June 2011) to 1.776 (site 1, April 2011). The degree of dominance (C) varied inversely to H. The corresponding values of C and evenness (e) were inversely proportional to H.

In the littoral zone, shells of *Dreissena polymorpha* were found. However, no *Dreissena* larvae nor living adults were observed in the plankton and the periphyton communities.

Key words: Small reservoirs, Macrozoobenthos, Chironomidae, Oligochaeta

This work is co-funded by the European Commission within the 7th Framework Programme, Project no. 231526 and the National Science Fund project 02-142/2009.