

Project Update: October 2021

The project entitled "Mass removal of the black bullhead (*Ameiurus melas*) – Possibilities for self-sustaining commercial farming in Serbia" (2nd Rufford Small Grant ID: 31053-2) has been successfully completed. This project was a continuation of a study started in the Ponjavica Nature Park, which aimed to examine the effect of black bullhead selective removal on the composition of the fish community and the metabolism of the entire ecosystem. During this project, field research was conducted on Lake Markovačko.

Also, the experimental rearing of this species was completed within the Center for Fisheries and Applied Hydrobiology "Mali Dunav" of the Faculty of Agriculture, University of Belgrade, during which the caught individuals of this species were used in aquaculture as fry for stocking. Experimental rearing provided specific data on the best farming system, yields that can be achieved in different farming systems, fish quality and economic profitability of farming.

Colleagues from the Faculty of Biology, University of Belgrade (Department of Algology, Mycology and Lichenology) collected samples for qualitative and quantitative analysis of phytoplankton, while colleagues from the Institute for Multidisciplinary Research collected data on physico-chemical parameters of water with the help of a multiparameter sonde. Given that Lake Markovačko suffers great anthropogenic pressure (numerous recreational fishermen, farms near the shore and a large apple plantation that is regularly treated with pesticides and insecticides) during the project it was decided to expand fish population research to assess surface water quality based on microbiological parameters and ecogenotoxicological and histopathological tissue analyses of autochthonous and allochthonous fish species. Genotoxic potential was assessed using an alkaline comet and a micro-nucleus test to quantify DNA damage in blood cells. In parallel, the concentration of metals and metalloids in the liver, gills and muscle was monitored, using the ICP-OES method. Colleagues from the Institute for Multidisciplinary Research were in charge of these analyses.

Also, a number of reared black bullhead individuals were subjected to ecogenotoxicological and histopathological analysis of tissues, in order to determine whether there are differences between them and individuals from the natural ecosystem and whether, in the meantime, DNA molecules were repaired during rearing.





