

Project Update: July 2021

Previous project activities have been as follows:

- Preparation of aquariums for cultivation and spawning of *Umbra krameri* species in the Center for Fisheries and Applied Hydrobiology "Mali Dunav" of the experimental farm Radmilovac, Faculty of Agriculture, University of Belgrade (three aquariums, one with sand and natural plants, second with gravel and artificial plants and the third with a combination of gravel and sand and artificial plants).
- A permit was obtained from the Ministry of Environmental Protection of the Republic of Serbia and the Provincial Institute for Nature Protection of Serbia for hunting and collecting the species *Umbra krameri* for scientific research purposes in the area of AP Vojvodina.
- Fish were collected at the site of the Special Nature Reserve "Kraljevac", where a total of three females and nine males were collected by electrofishing.
- The individuals were transported to the Center for Fisheries and Applied Hydrobiology "Mali Dunav", where one female and three males were placed in each aquarium.
- Two of the three females spawned and their behaviour during and after spawning was monitored, as well as incubation of eggs and hatching of larvae.
- In each aquarium water temperature, oxygen concentration, pH and electrical conductivity are monitored. It has been taken care for old and new individuals in terms of maintaining suitable conditions for their breeding, feeding, care.
- During the past months, field research was carried out on seven sites (Zlatica/Aranca, Tukoš canal, canal near Kusić, Kereš, Krivaja, Kupusina, Batar potok) for which there were literature data on earlier findings of *Umbra krameri* on them as well as sites that by their hydromorphological and physicochemical characteristics correspond to known as *Umbra* sites in Serbia in order to determine the potential presence of *Umbra krameri* on them and take material for genetic analysis.
- Educational and promotional material was printed, which included brochures, posters, t-shirts, and key rings.
- The project was also promoted by holding two lectures at the University of Belgrade. One was at the Faculty of Biology, University of Belgrade, and the other at the Center for Fisheries and Applied Hydrobiology "Mali Dunav" of the Faculty of Agriculture, which was attended by students of the Faculty of Biology from Belgrade and Novi Sad. Also, two poster presentations were held (at the Faculty of Biology and in the "Kraljevac" reserve), when promotional material was distributed to students and citizens.



Aquarium with sand and natural plants



Aquarium with gravel and artificial plants



Field collection of *Umbra kramera*



Male and female *Umbra kramera*



Female *Umbra krameri* in the aquarium



Fertilized eggs



A female who keeps eggs



Young individuals of *Umbra kramera*



Promo material- brochures and key rings



Promo material- t-shirts



Potential habitat of *Umbra kramera*



Lecture at the Center for Fisheries and Applied Hydrobiology "Mali Dunav"



Lecture at the Faculty of Biology