Project update, December, 2024.
Title of the project: “Endangered freshwater snail (*Theodoxus transversalis*) in Serbia - distribution, population status and conservation”
Project ID: 41198-1
Project leader: Andjelina Tatović

The project activities started in June 2024. First, we have created a project logo and made various promotional materials (T-shirts, pencils, bags, bookmarks and posters) with the project and Rafford logos printed on it. We ordered the field equipment e.g. sondes for multi-parametric probe for measuring several physico-chemical parameters of the water directly on the field, additional plastic containers for macrozoobenthos and water samples, ethanol for fixing the samples, etc. We have also contacted licensed laboratories for detailed physico-chemical analysis of water samples that will be collected from localities inhabited by striped nerite.

Field sampling started in July. Summer investigations were done in July and August during 10 field days, when we covered as many catchment areas, rivers and sites, as possible. The presence of *Theodoxus transversalis* was confirmed in 3 main drainage/river systems - Drina, Velika Morava-Južna Morava-Nišava and Danube River. The snail was detected at a total of 13 sites/locations, 9 of which belong to the Velika Morava-Južna Morava-Nišava River system. It is worth mentioning that *T. transversalis* was found at all sites, except one, alongside representatives of other freshwater nerites occurring in Serbia (*T.danubialis* and *T.fluviatilis*). In addition, about 1/3 of the localities have relatively large populations of *T.transvesalis*, including juveniles and large adult snails, which indicates a fairly good health of the populations. In contrast to these healthy and abundant populations, a rather low population density was found at 7 sites, with only a few adult snails seen or caught in the general macroinvertebrate samples. To assess the ecological status of the sites, water and macroinvertebrate samples were taken. Basic physico-chemical parameters were measured directly on the field, while water samples were taken for additional and more detailed laboratory analyses. Macroinvertebrate samples were taken using benthological hand nets (25x25 cm, 500 μm mesh size). These samples were collected from sites with actual/confirmed or potential (empty mussels) occurrence of *T. transversalis*. A total of 15 such samples were taken and transported to the laboratory at Faculty of Biology, University of Belgrade, where processing of those samples will take place (separation of biological material from debris and identification to the lowest taxonomic level by using appropriate taxonomic keys) will be done. Obtaining these data, we will be able to analyze which type of macrozoobenthos community striped nerite favors, and what amplitude of variations in values of measured physico-chemical parameters of water this species tolerates.

Autumn field work took place in October and November and comprised of 8 field days. During autumn field work, all sites where *T. transversalis* was found during summer field research have been revisited. We also went to some additional sites where striped nerite could live. No new

localities were found during this part of field research. Samples of macroinvertebrates were taken in the same way as during the summer field investigation.

In October, the first lectures were held. The lectures were given to a group of students of Faculty of Biology, University of Belgrade, and also to three groups of children aged 7 and 8 (first and second grade of primary school), separately. Lectures took place at the Center for Fisheries and Applied Hydrobiology "Little Danube" at the Faculty of Agriculture, University of Belgrade. When the lectures were done, we had a discussion on the importance of *T. transversalis* conservation, and on the importance of negative anthropogenic impact on its habitat and overall ecosystems. Children were very interested in the topic, and very happy for being able to take part in our lecture and discussions. The students were delighted to have additional information on endangered striped nerite species, as well as on Rafford foundation. After these activities, promotional materials were distributed to the participants. Promotional materials are also distributed to colleagues at the Faculty of Biology, who are interested in our project. The posters are displayed at the Faculty of Biology and at the Center for Fisheries and Applied Hydrobiology "Little Danube" at the Faculty of Agriculture, University of Belgrade.

In the coming winter months, we will process the collected macroinvertebrate samples (30 in total) and analyze them in order to determine the most important descriptors of the macrozoobenthos communities where *T. transversalis* populations were detected.

Photo 1: Lecture given to primary school children (first and second grade) at Radmilovac

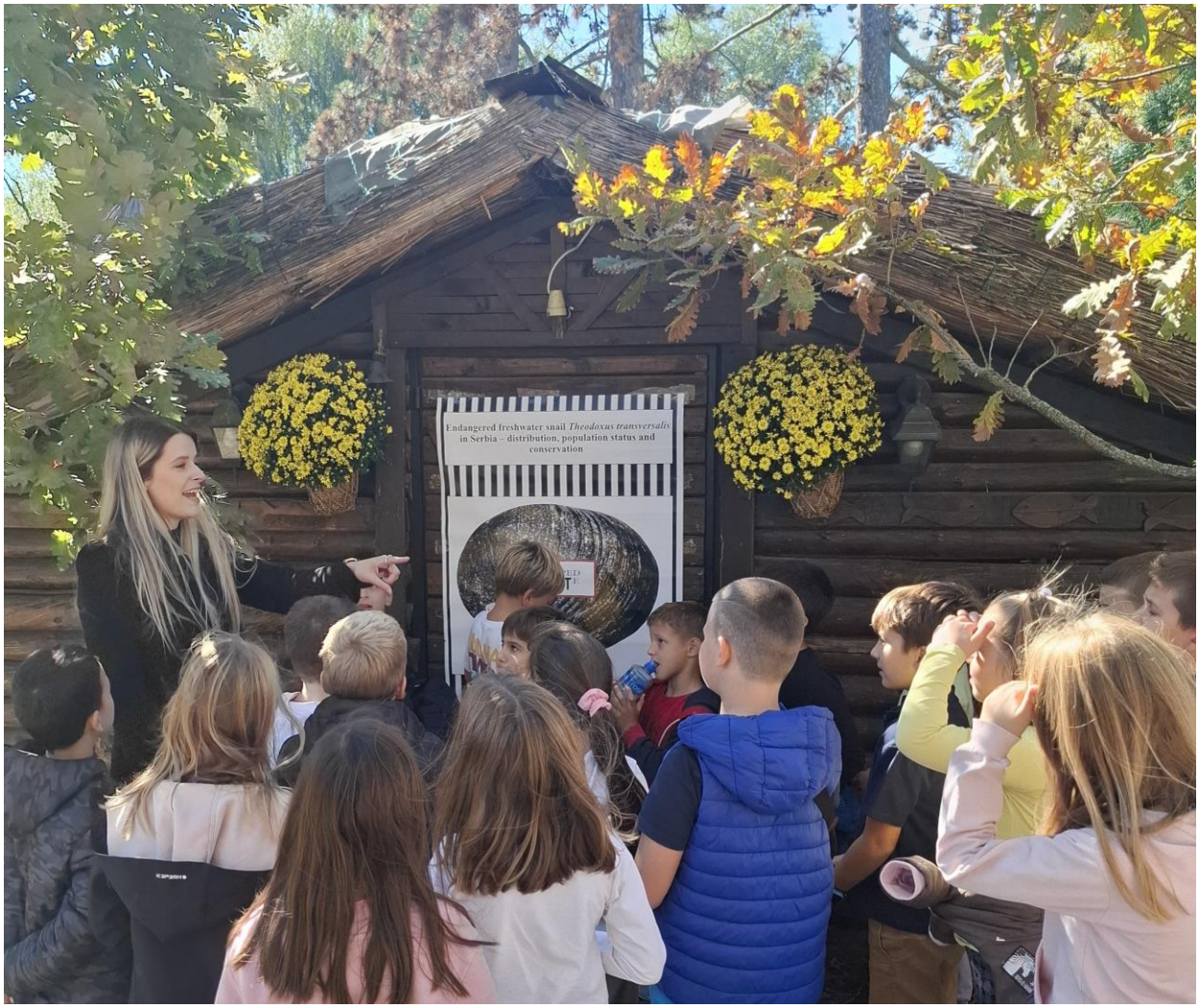


Photo2: Lecture given to primary school children (first and second grade) at Radmilovac

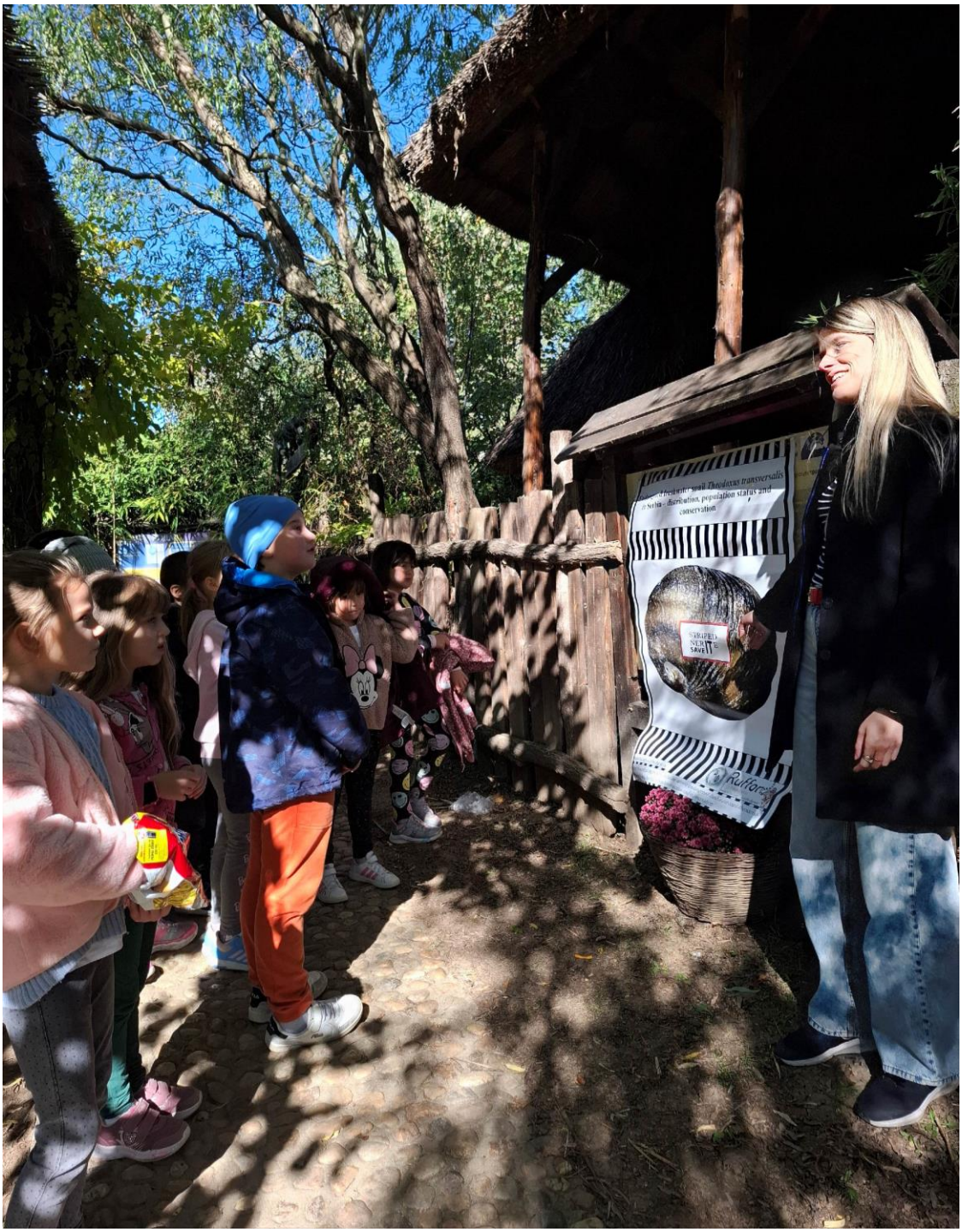


Photo 3: Lecture given to primary school children (first and second grade) at Radmilovac

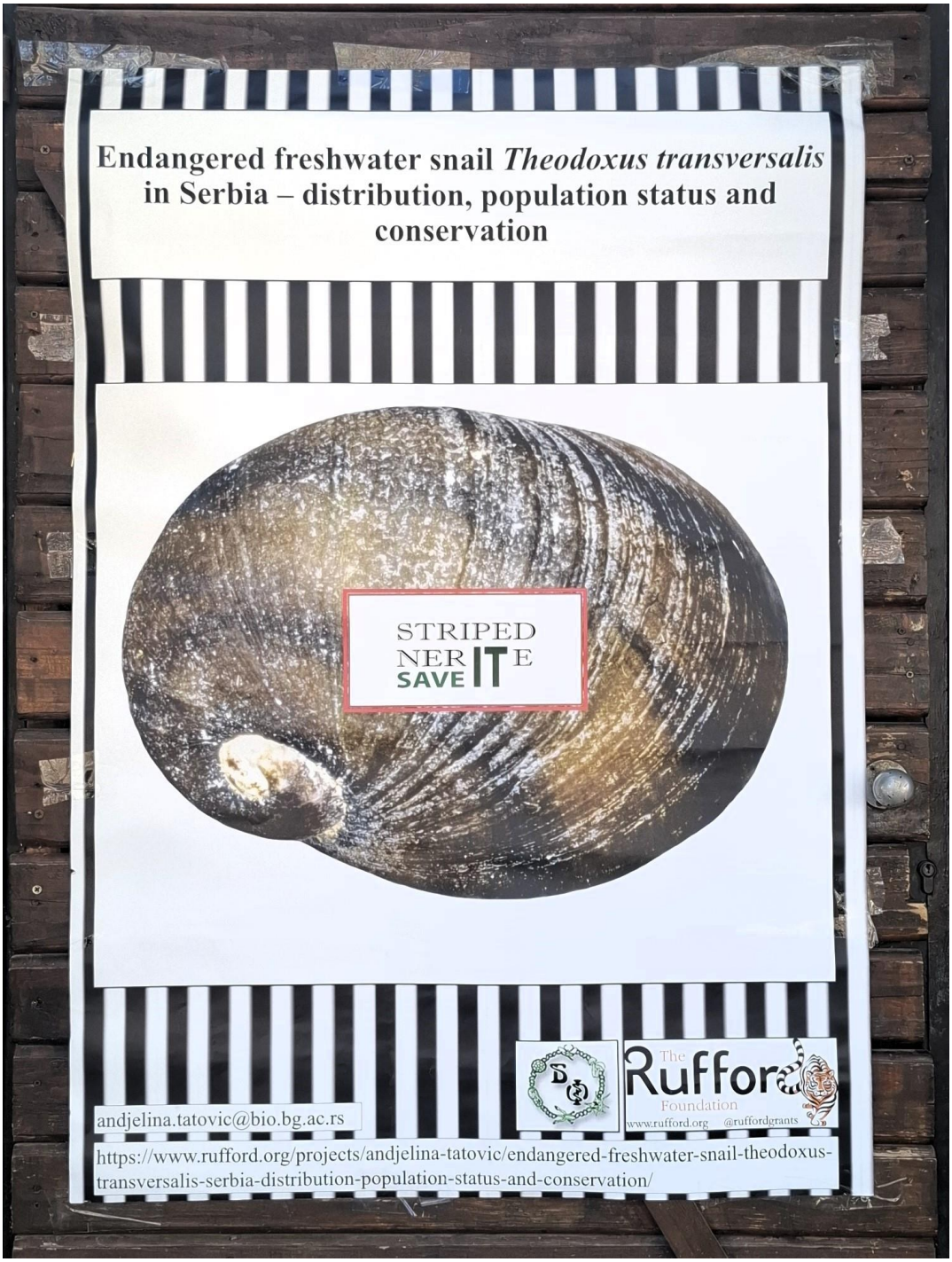
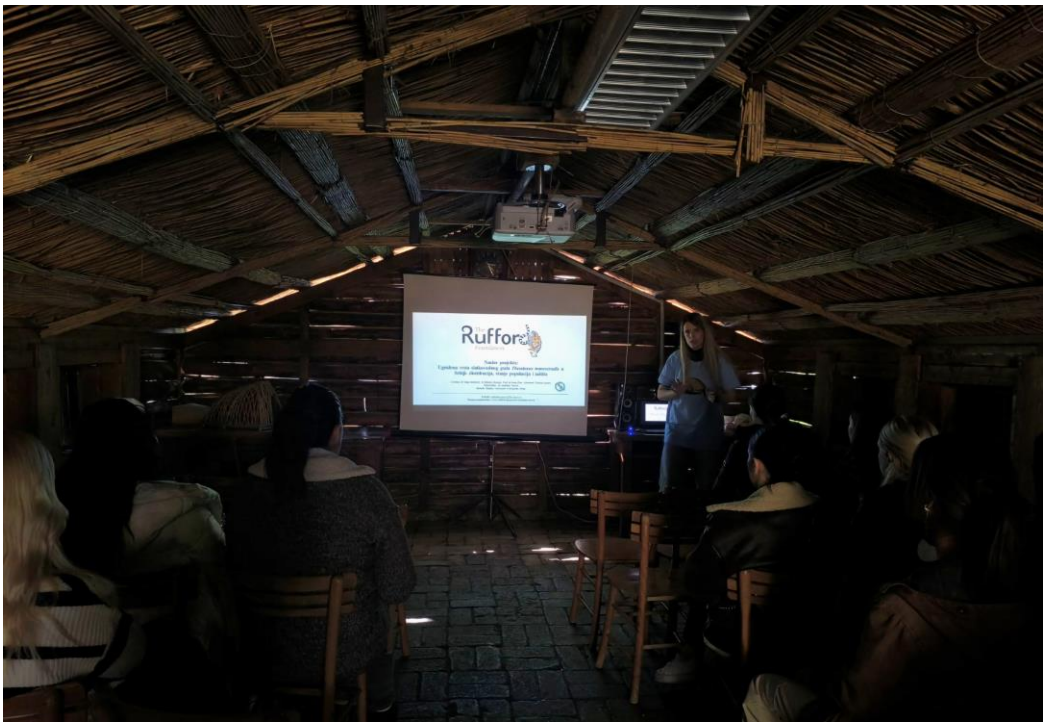


Photo 4: Poster (A0 format)



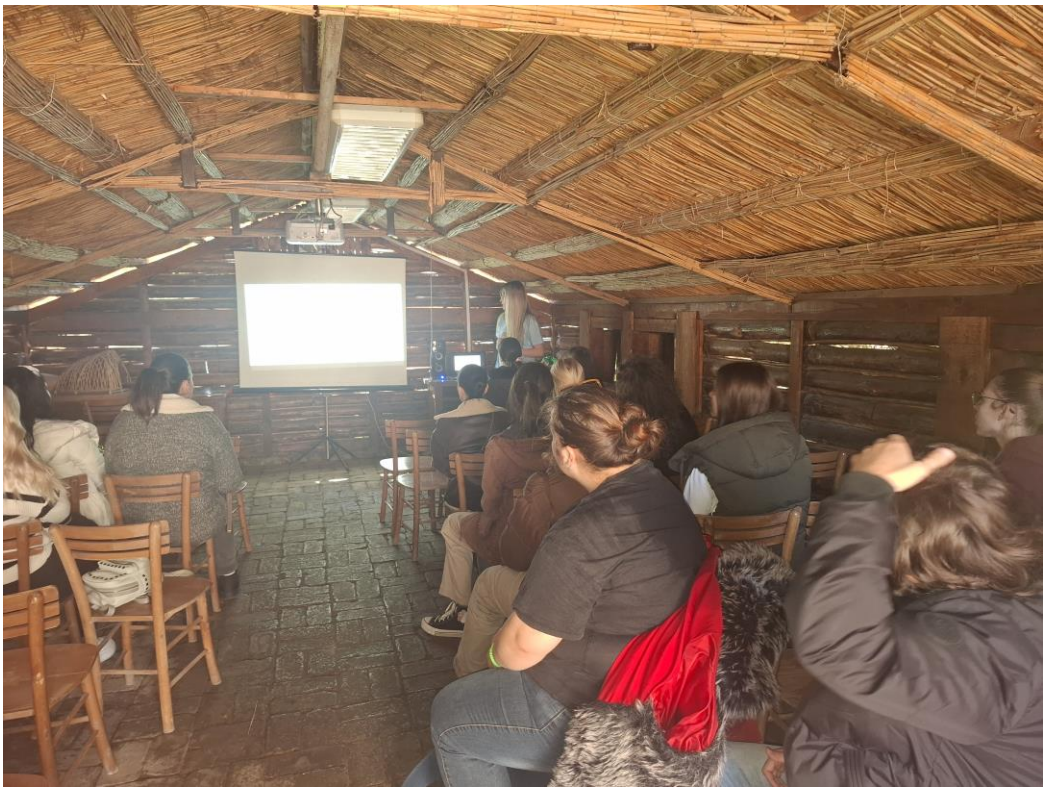


Photo 5,6: Lectures given to second-year students of the Faculty of Biology, University of Belgrad, Radmilovac

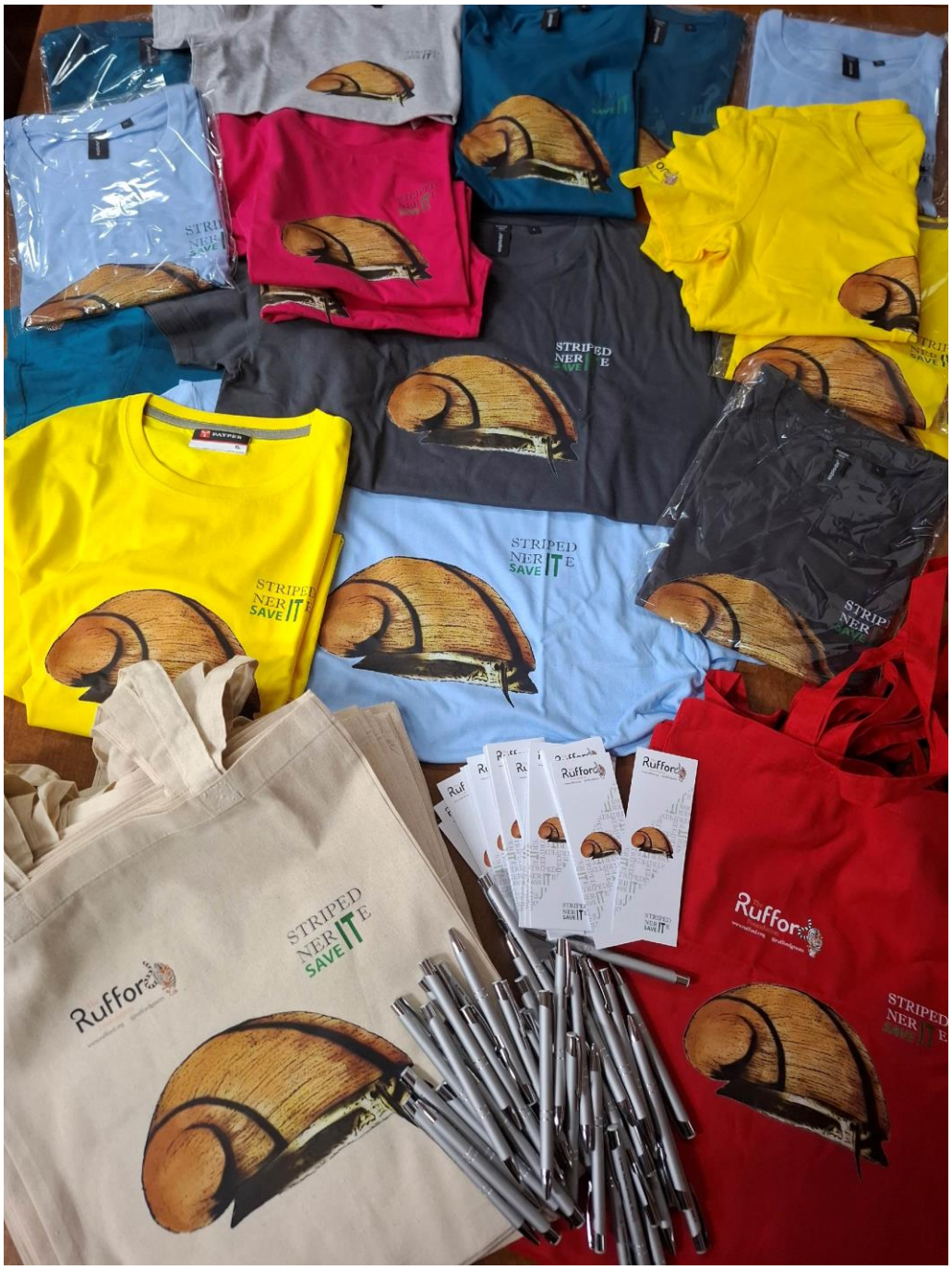


Photo 7: Promo material

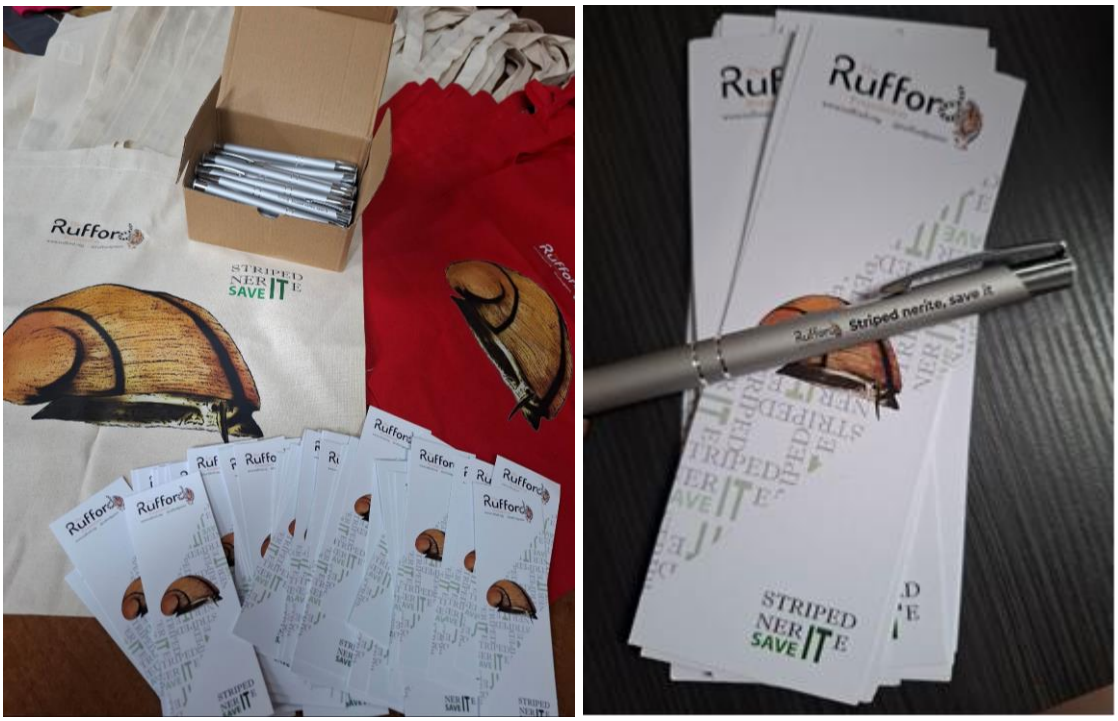


Photo 8,9: Promo material: cotton bags, bookmarks and pencils

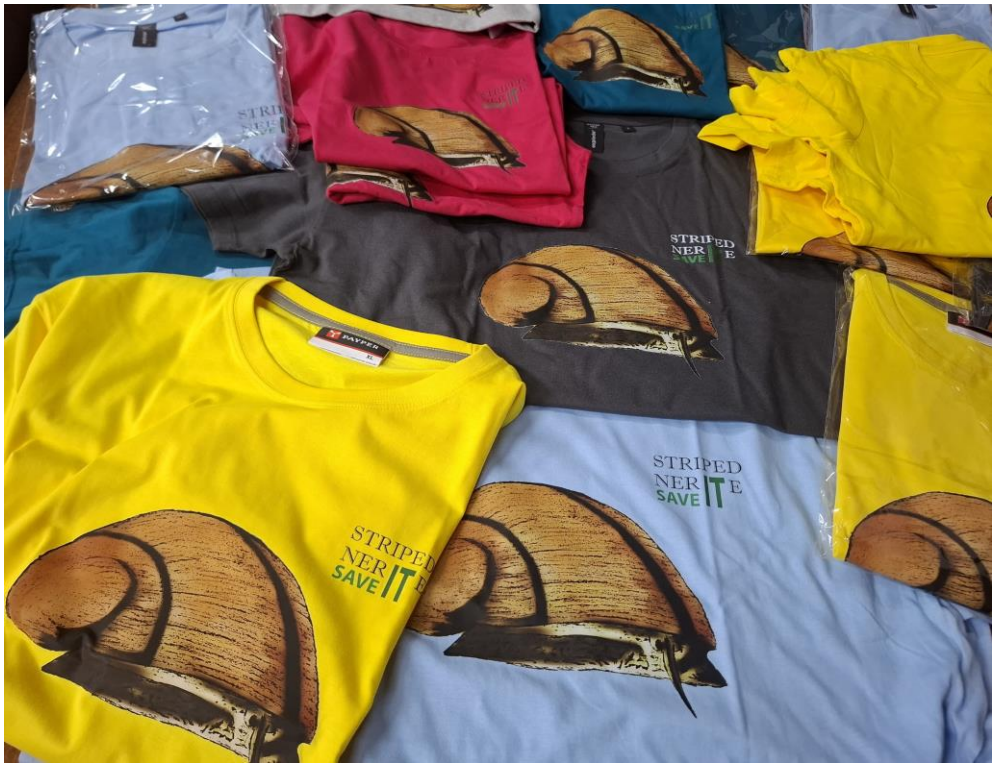


Photo 10: Promo material: cotton shirts

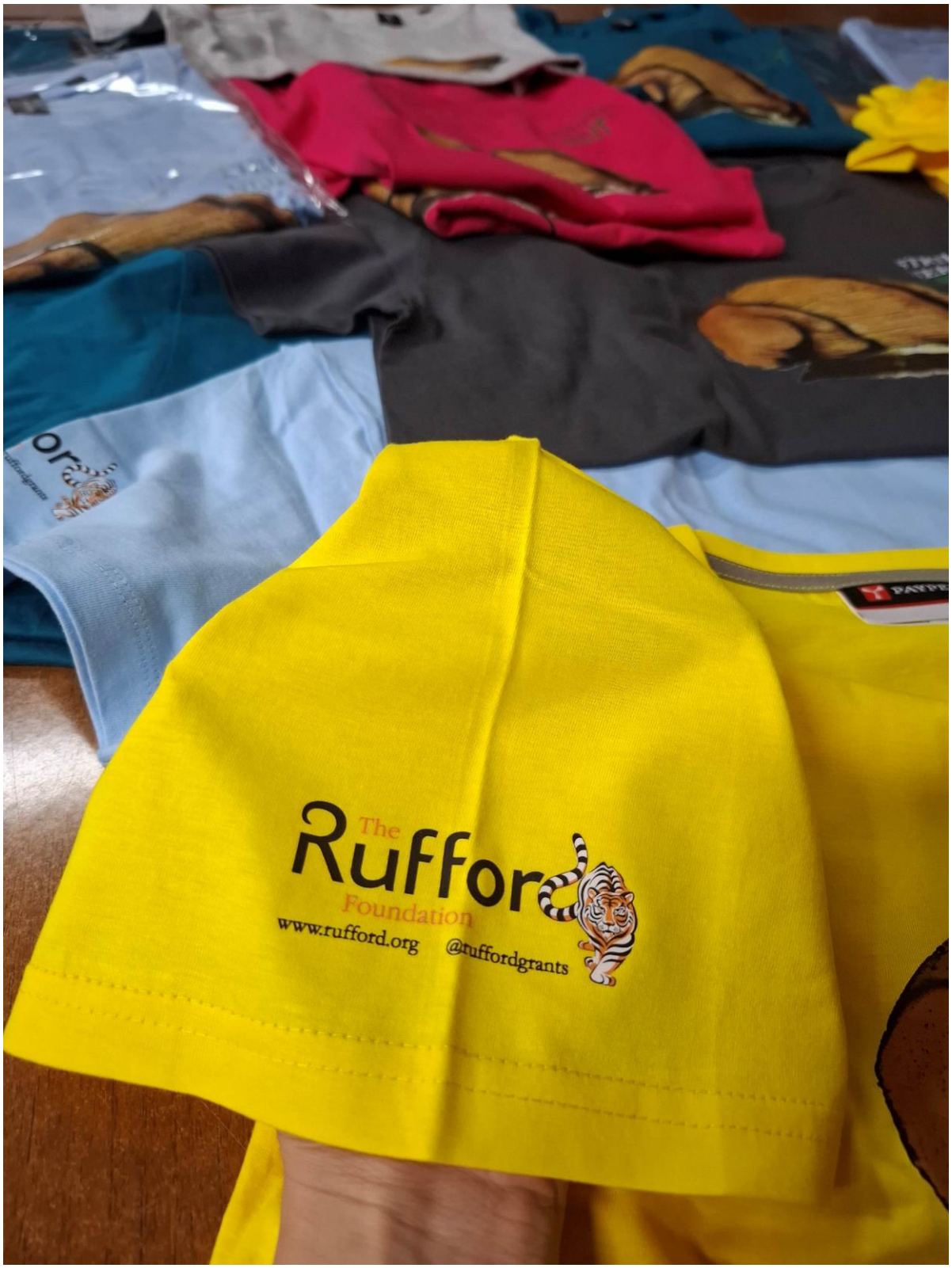


Photo 11: Promo material: shirts (Rufford logo on the sleeve)

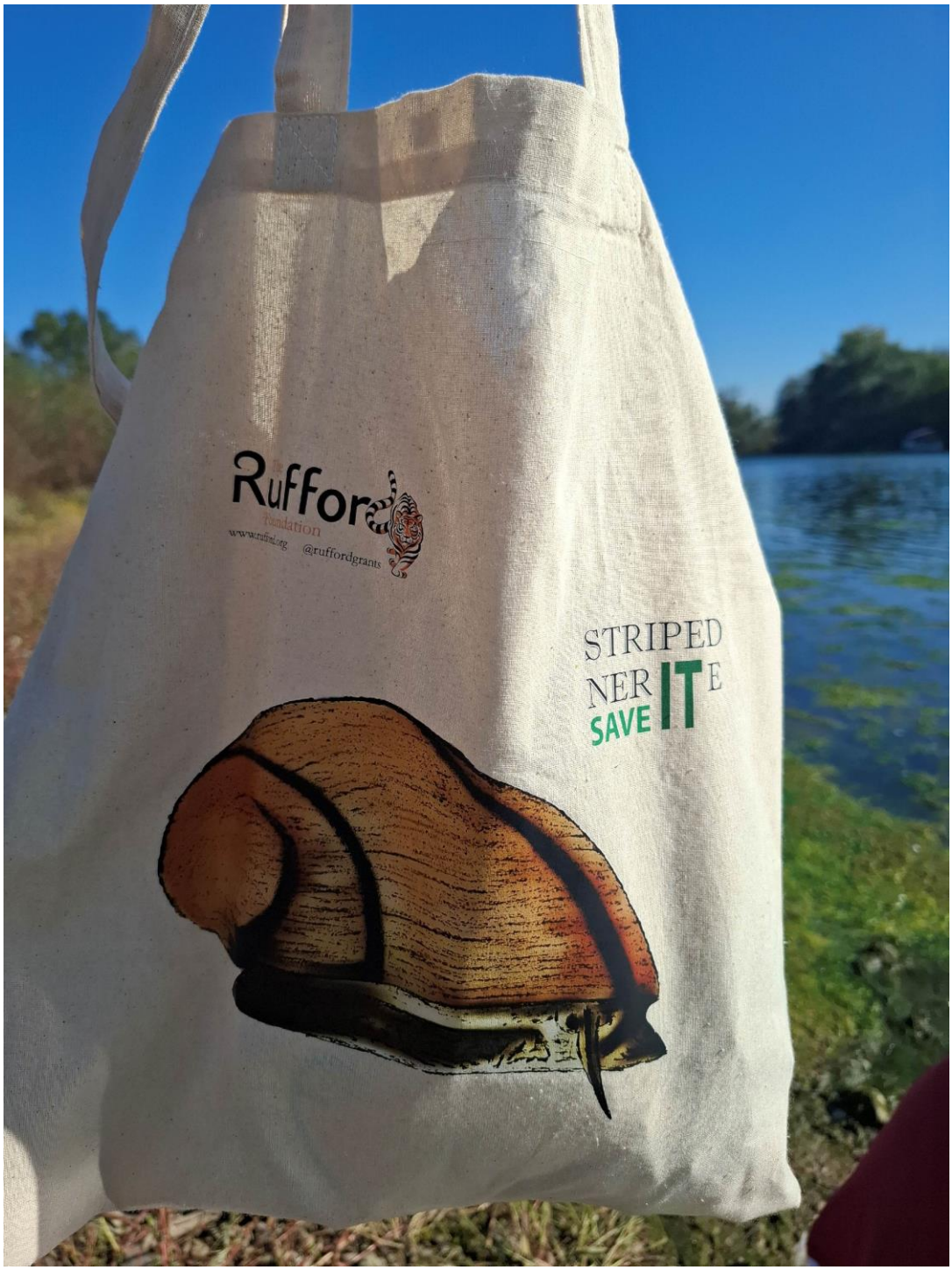


Photo 12: Promo material: cotton bag

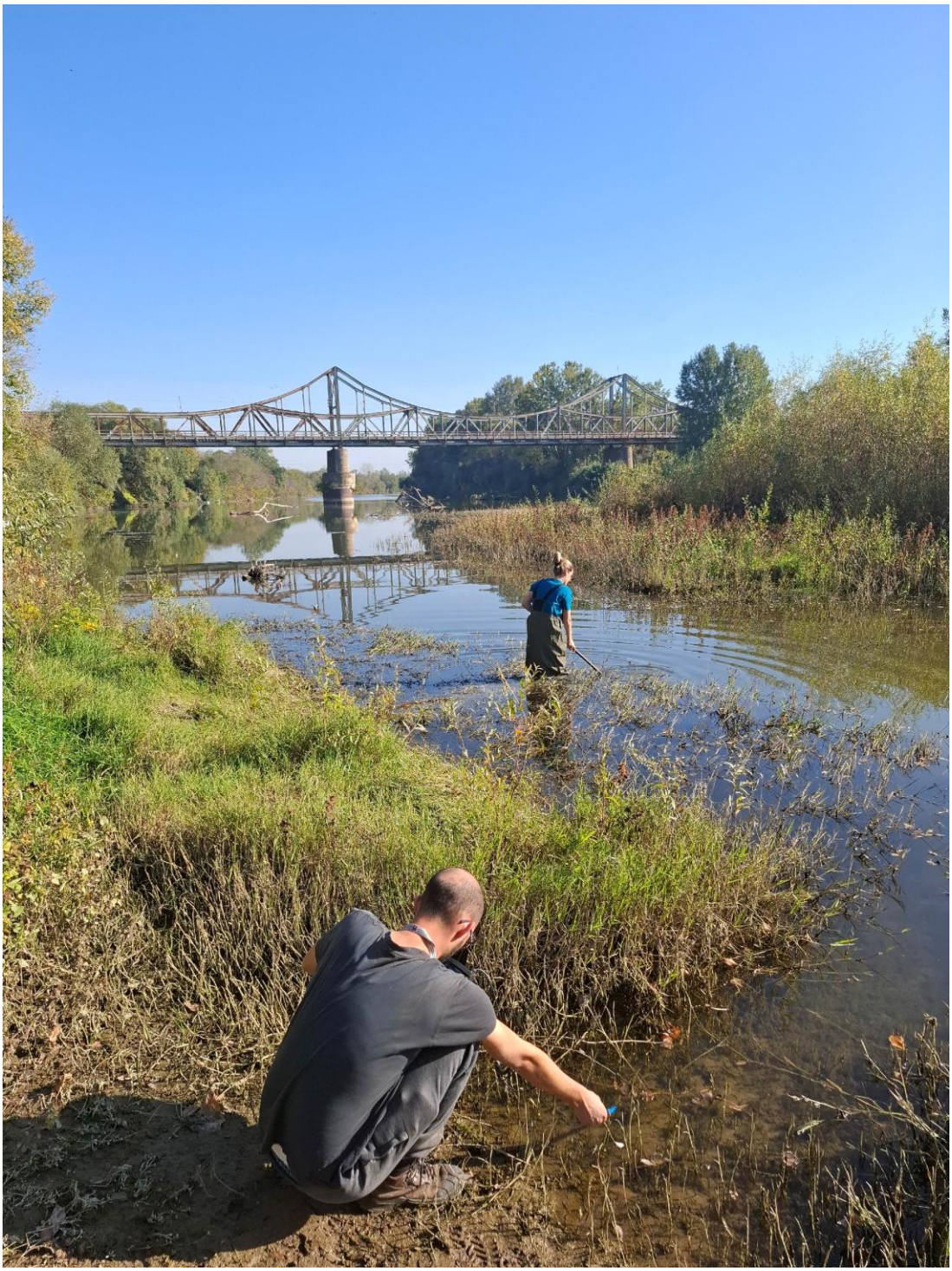
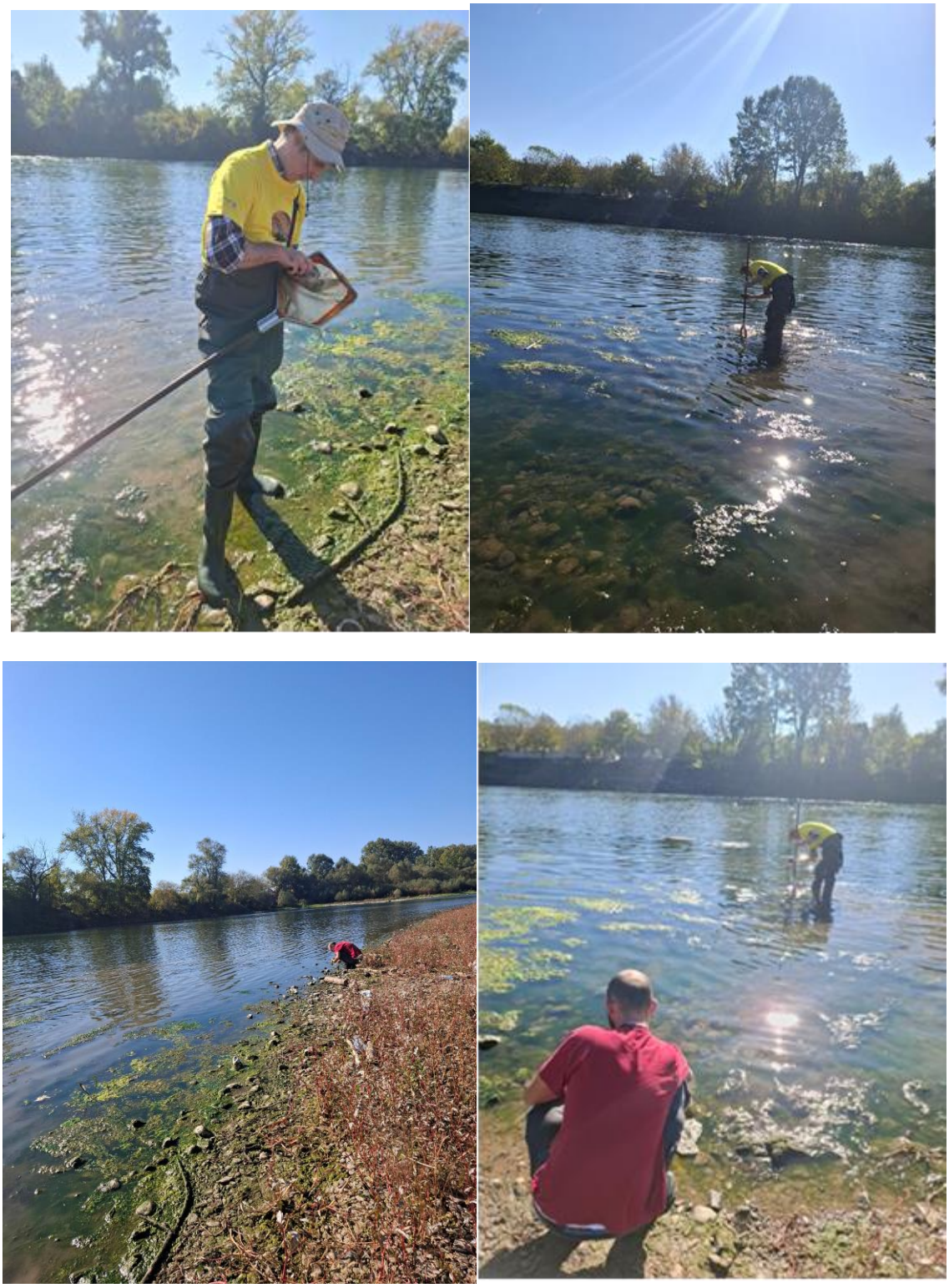


Photo 13: Sampling, Ljubičevo locality



Photos 14,15,16,17: Sampling, Varvarin locality

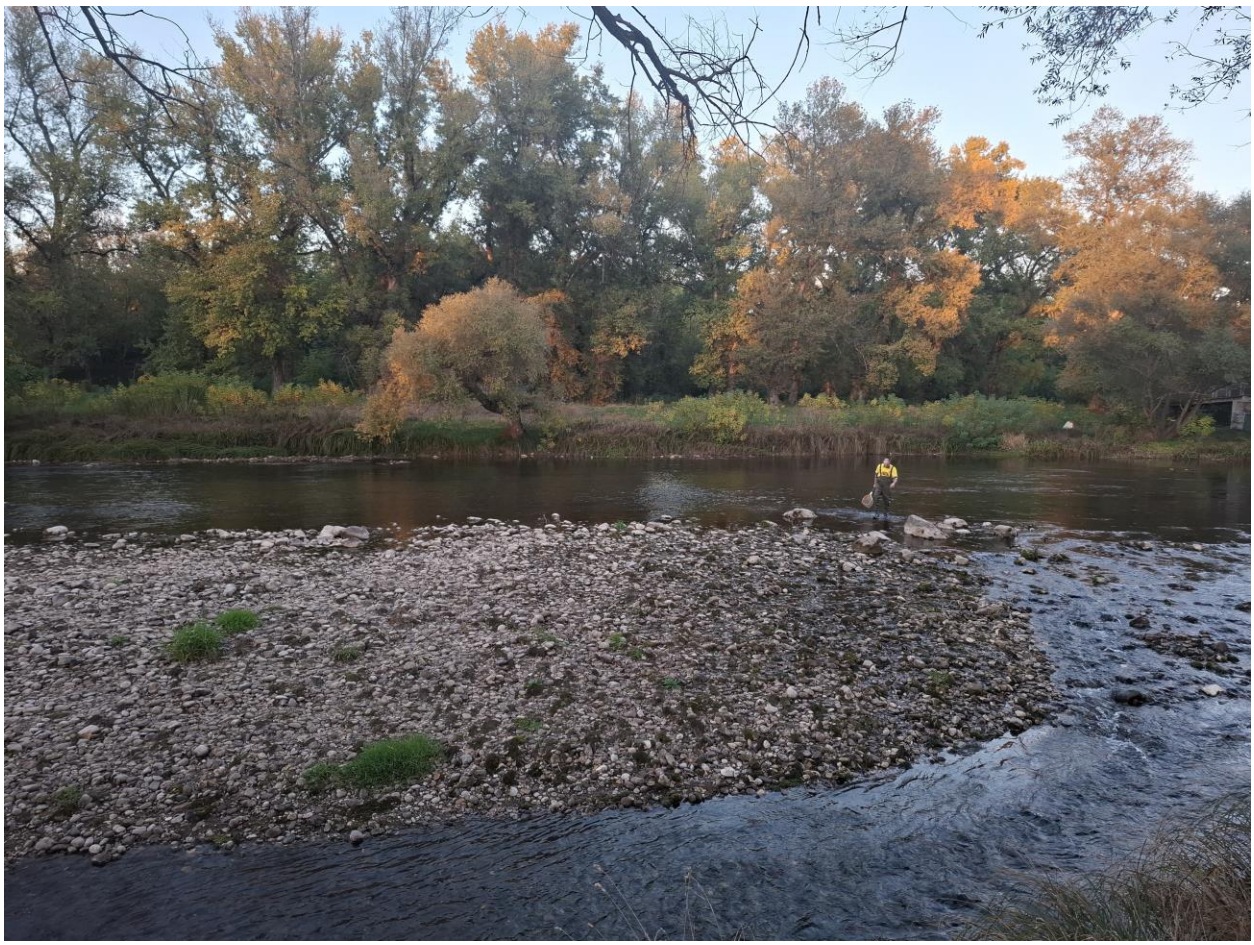
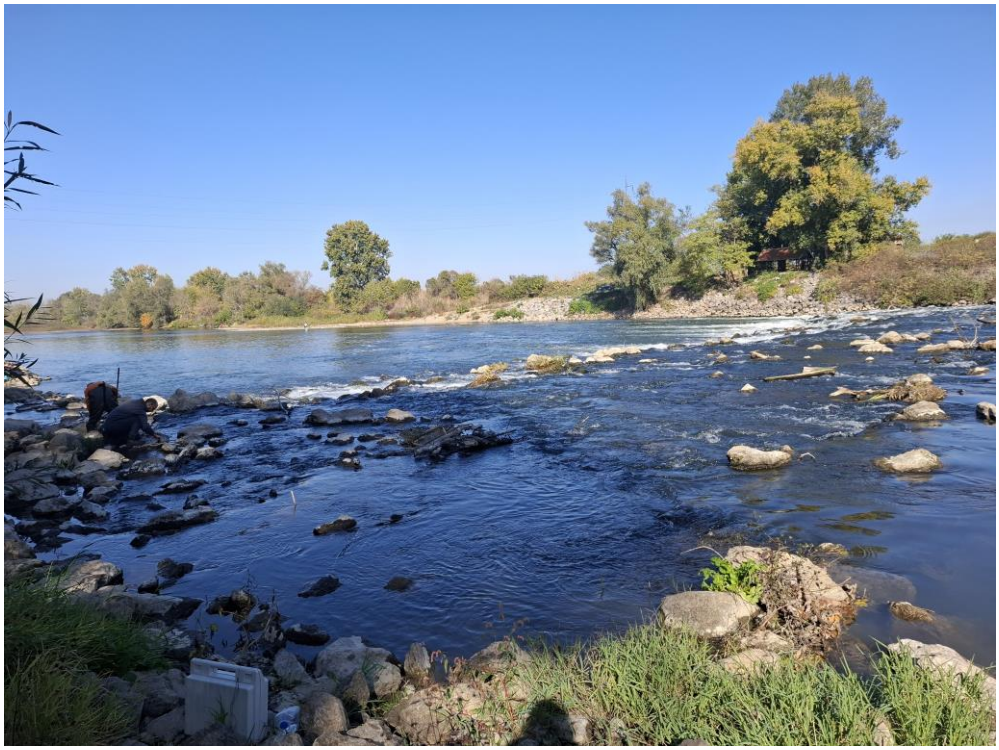
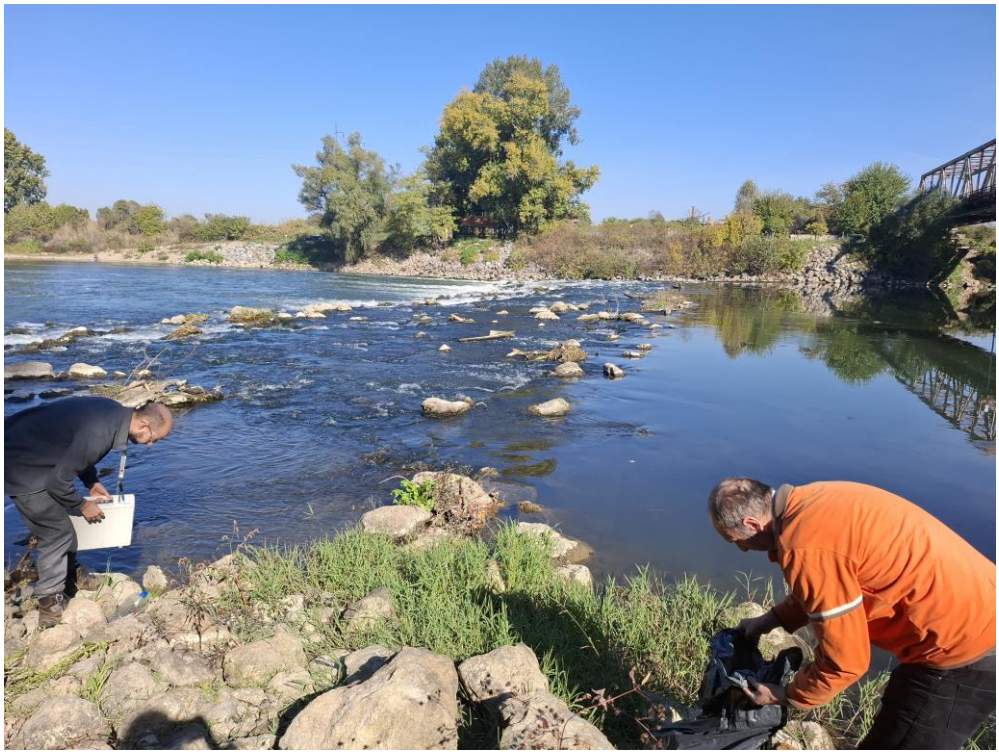


Photo 18: Sampling, Brzi Brod locality





Photos 19, 20: Sampling, Markovački most locality

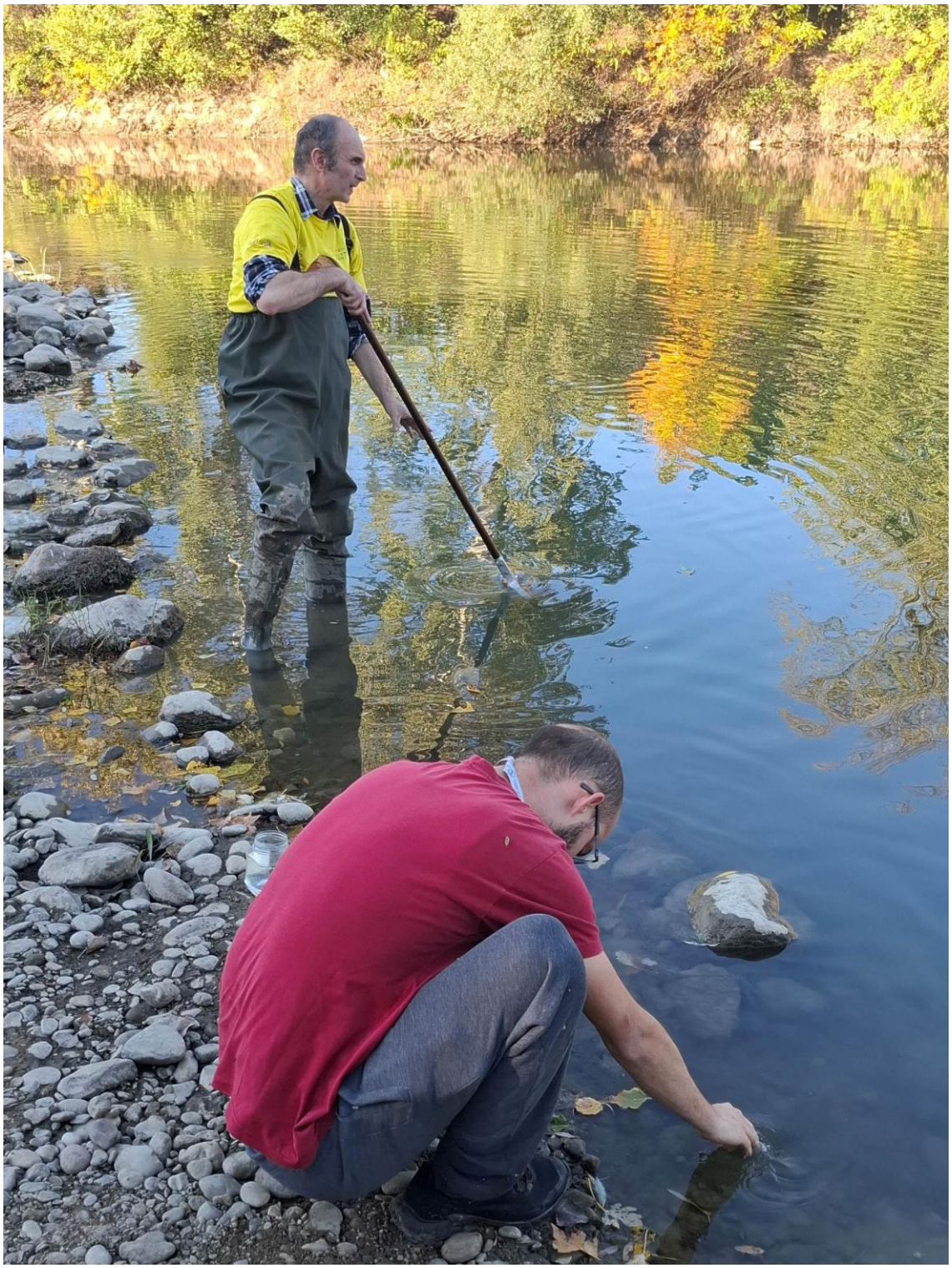
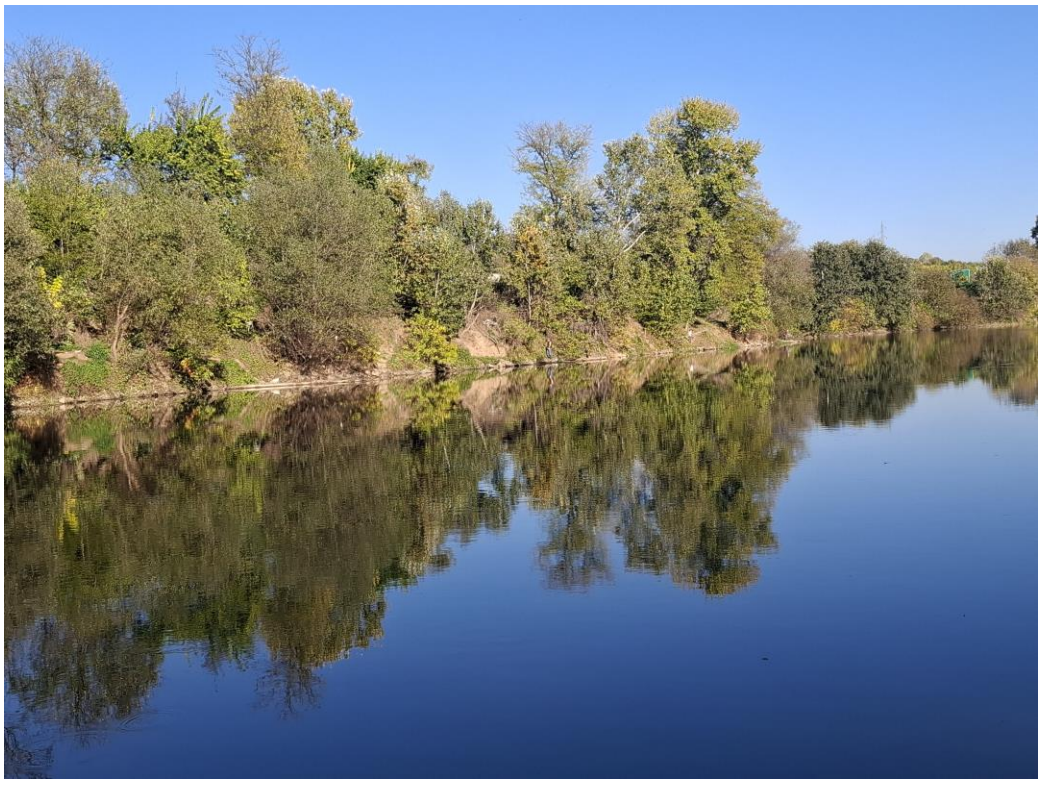
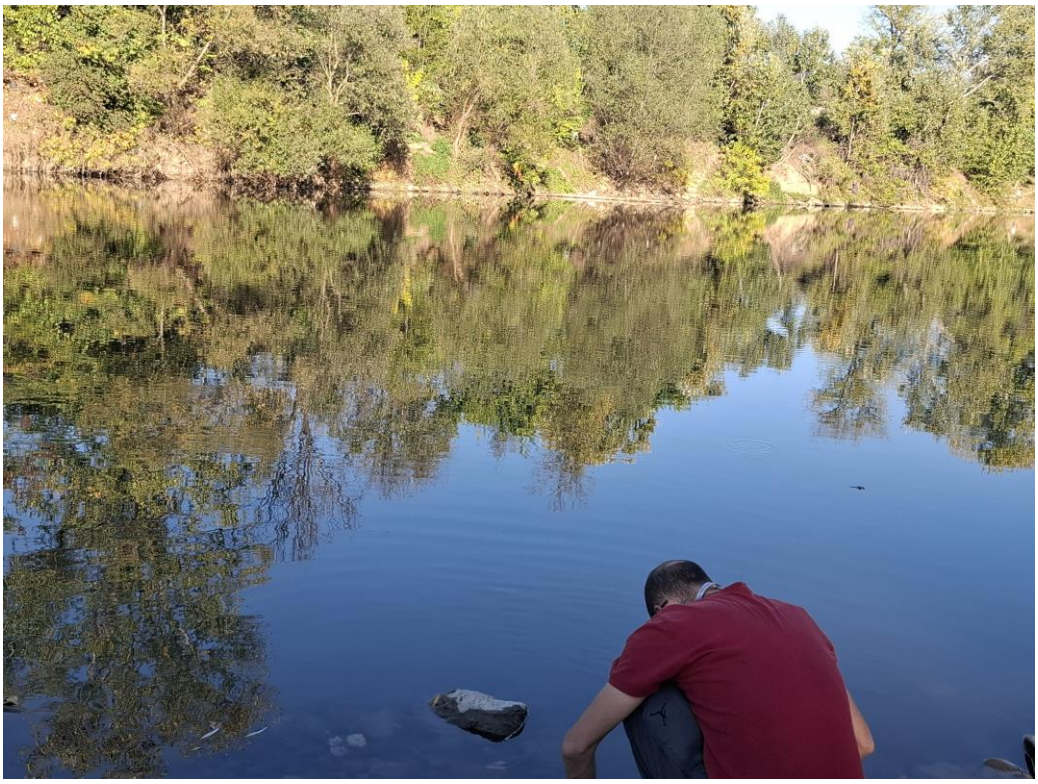


Photo 21: Sampling, Aleksinac locality





Photos 22, 23: Sampling, Aleksinac locality

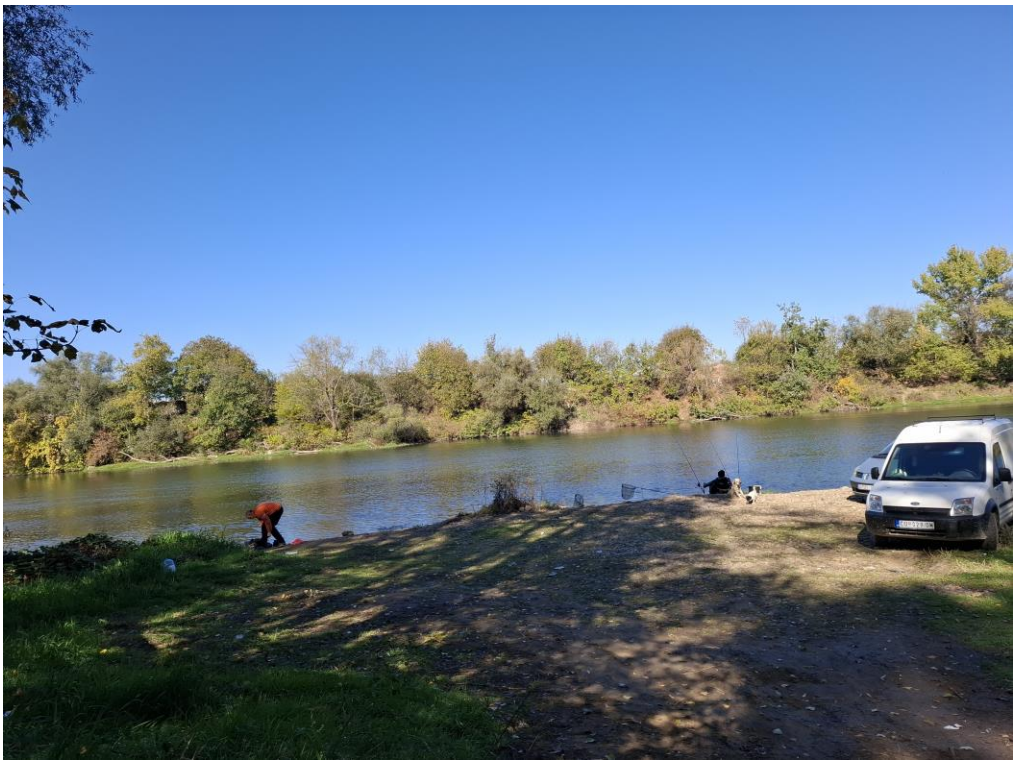


Photo 24: Ćuprija locality

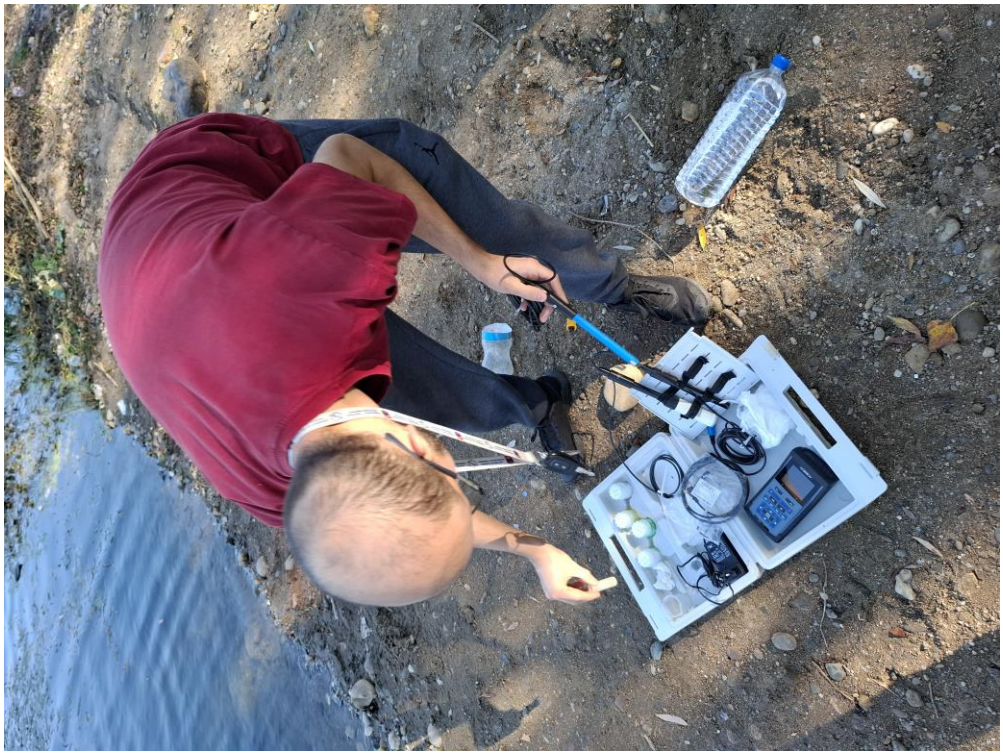
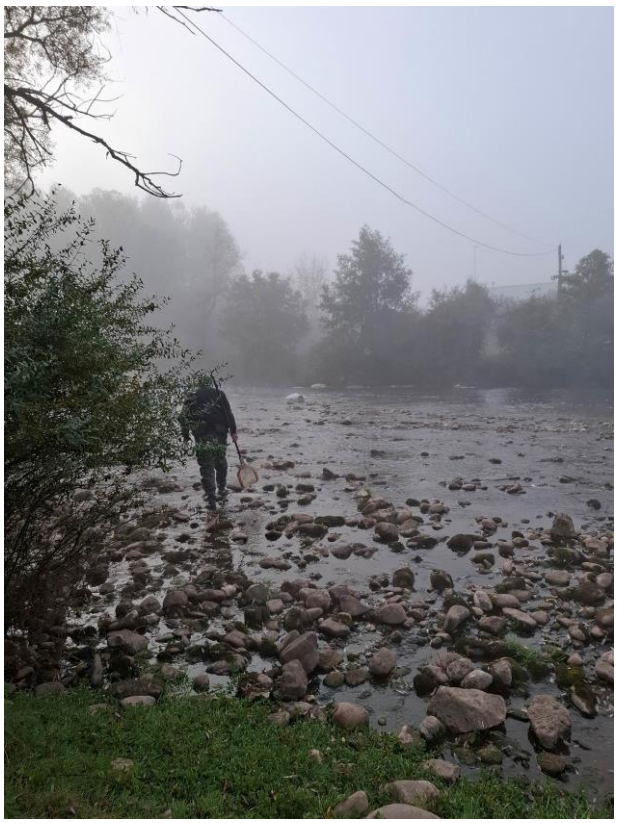
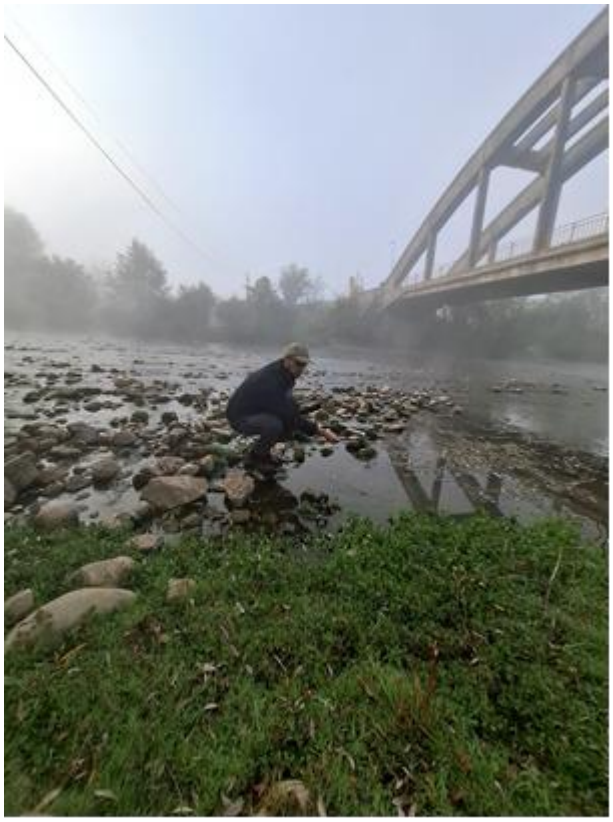
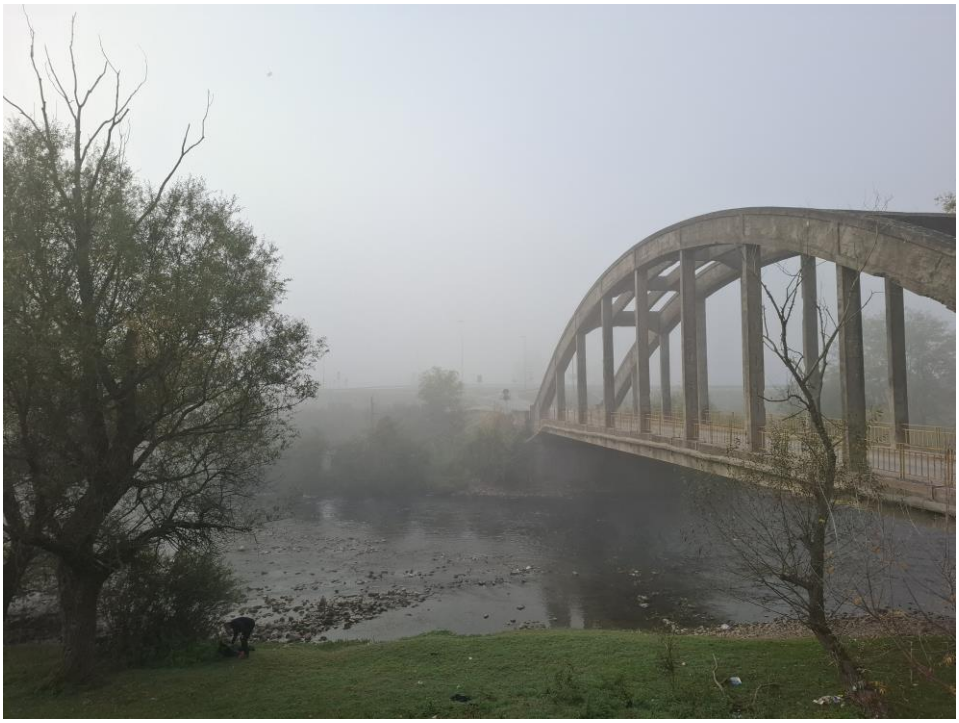


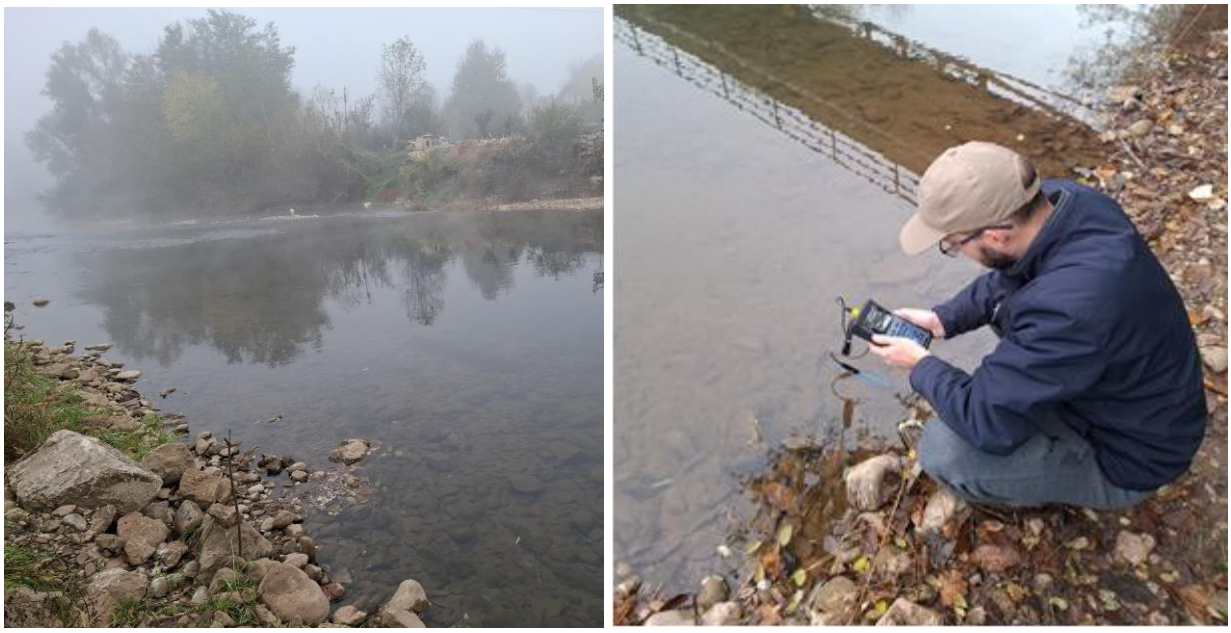
Photo 25: Ćuprija, multiparameter sonde







Photos 26,27,28: Sampling, Bela palanka locality



Photos 29, 30: Crvena reka locality

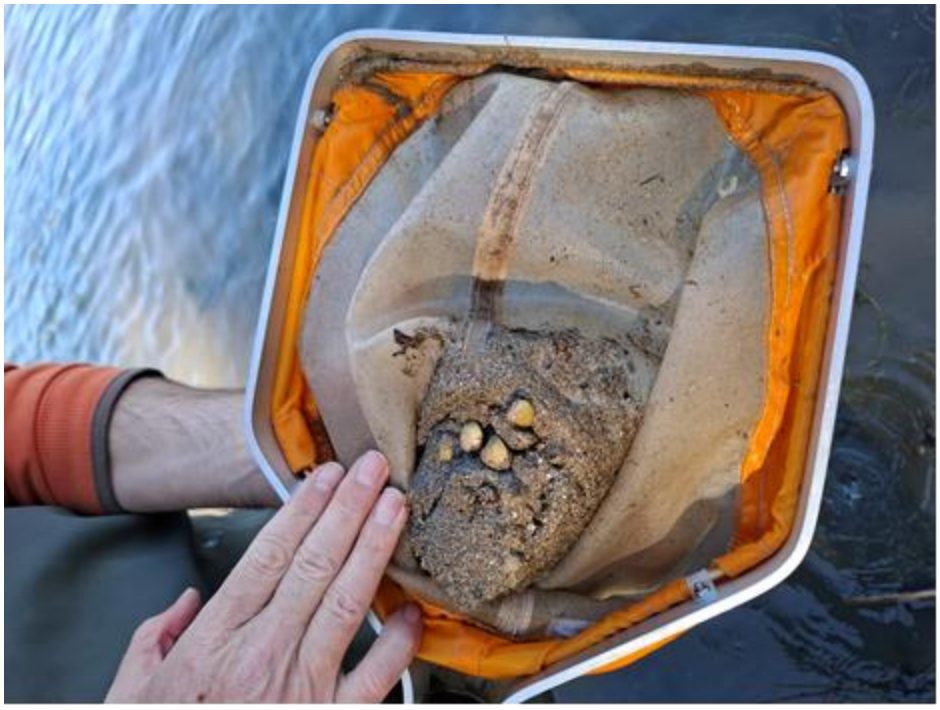


Photo 31: Sampling, benthological hand net (25x25 cm, 500 µm mesh size)

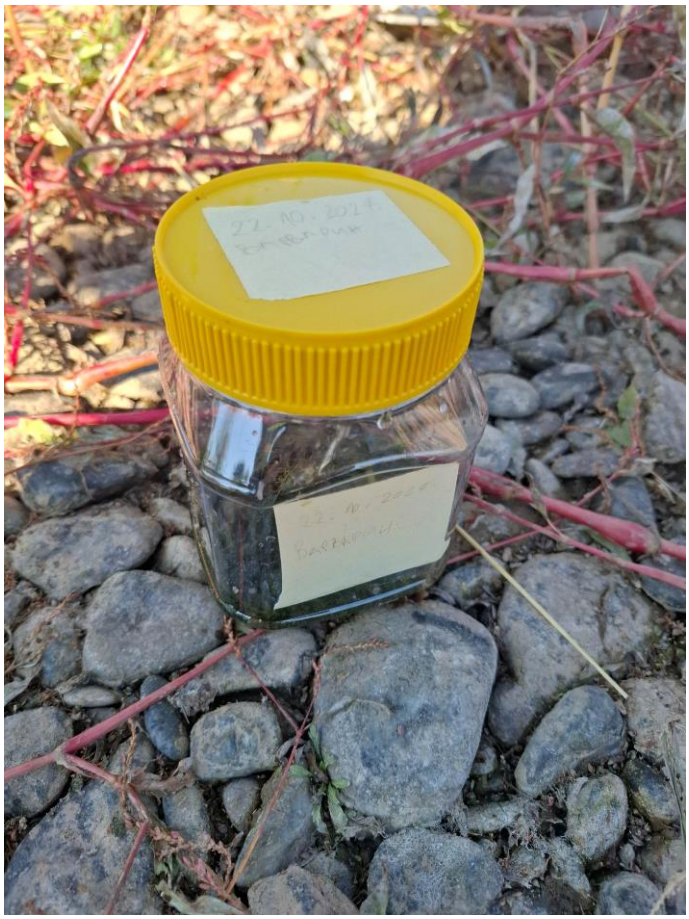


Photo 32: Macrozoobenthos sample

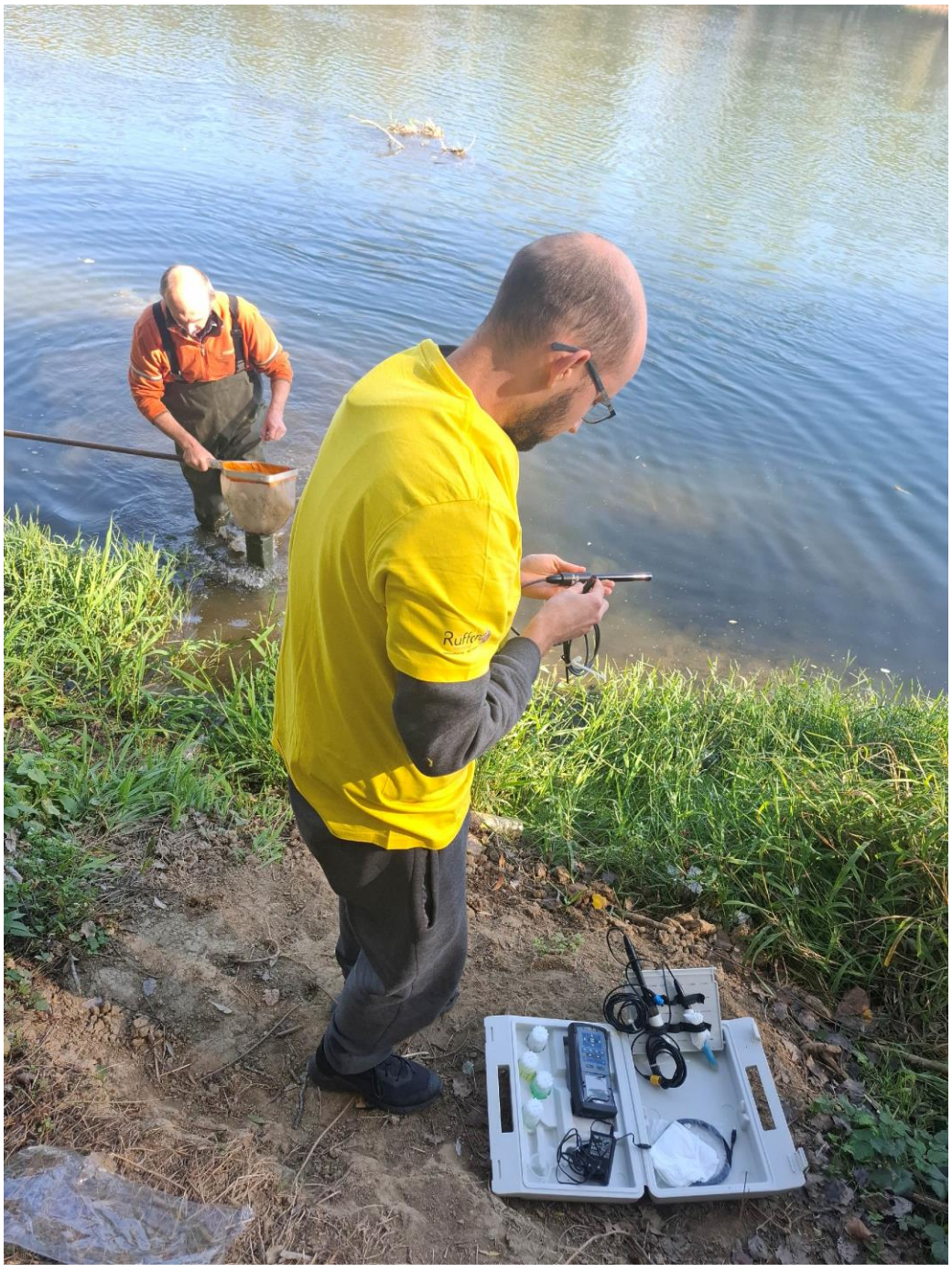


Photo 33: Sampling and measuring basic physico-chemical parameters; Bagrdan locality

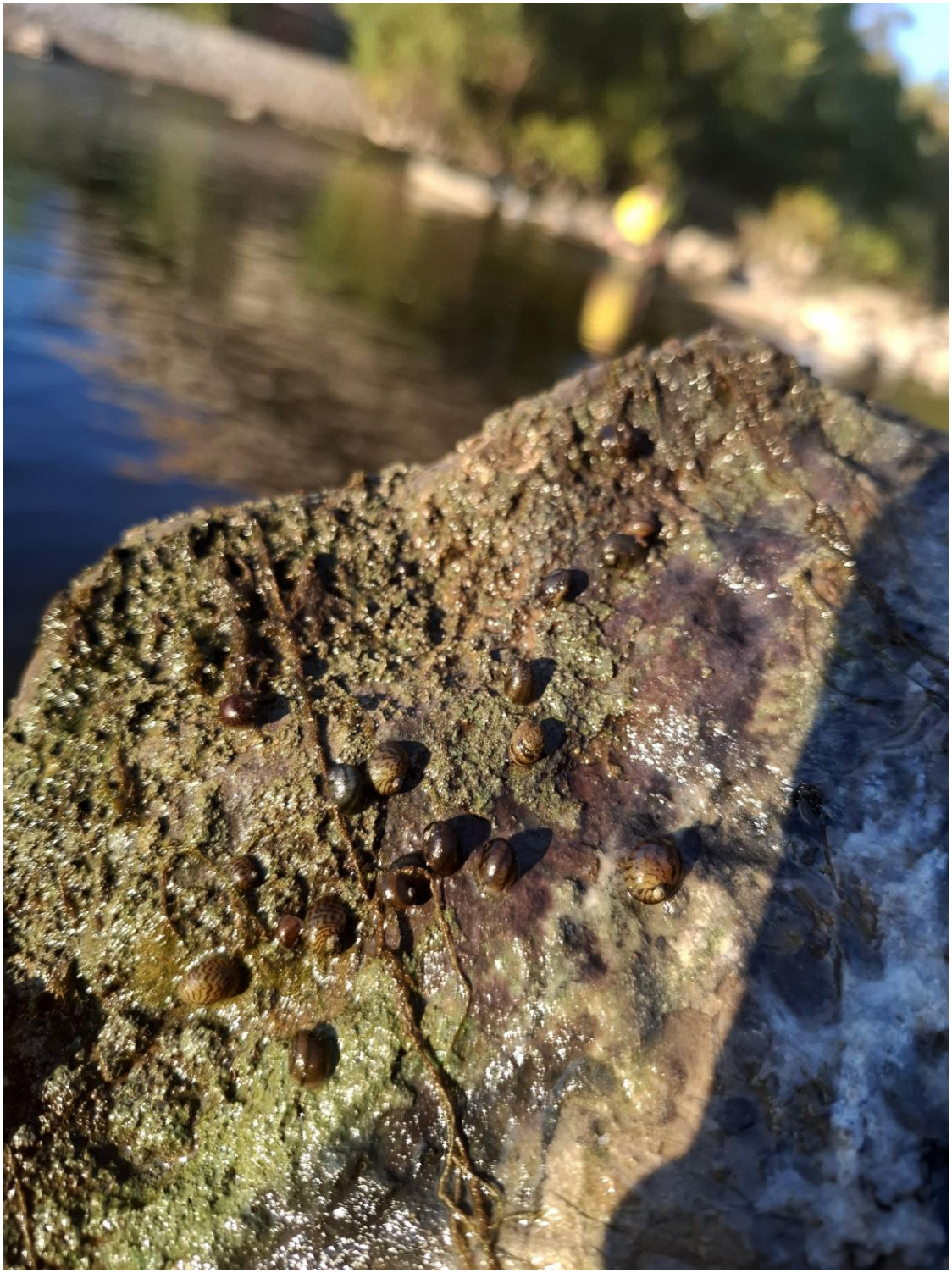


Photo 35: *Theodoxus transversalis* and *Theodoxus danubialis* on the rock in Nišava River

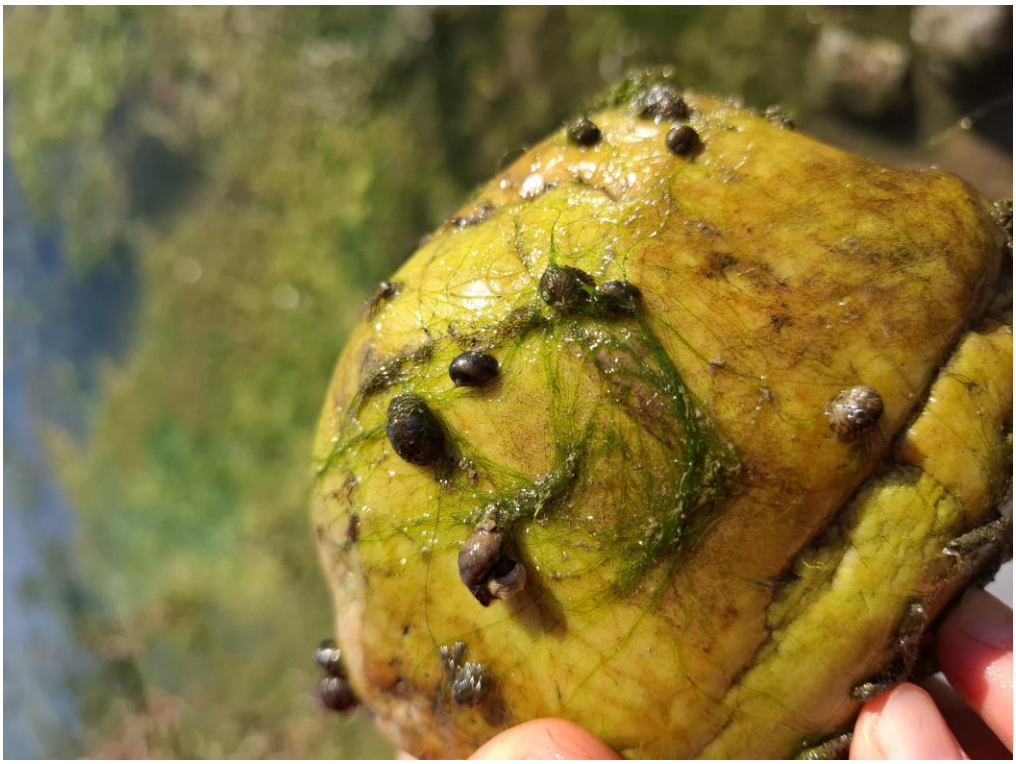


Photo 36: *Theodoxus transversalis* and *Theodoxus danubialis*

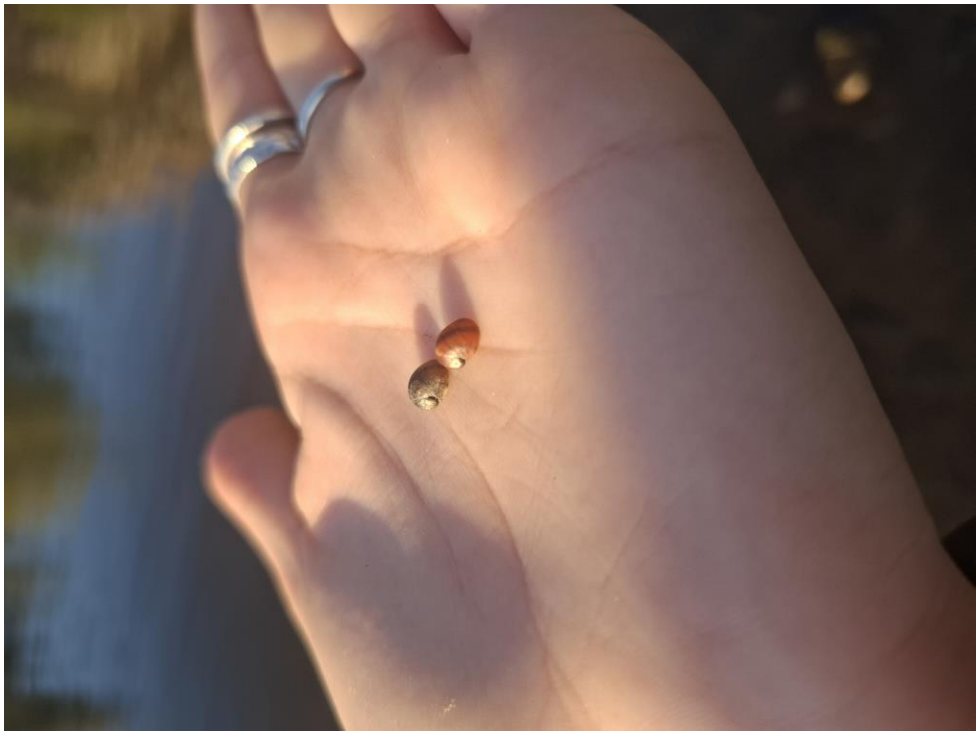


Photo 37: *Theodoxus transversalis*

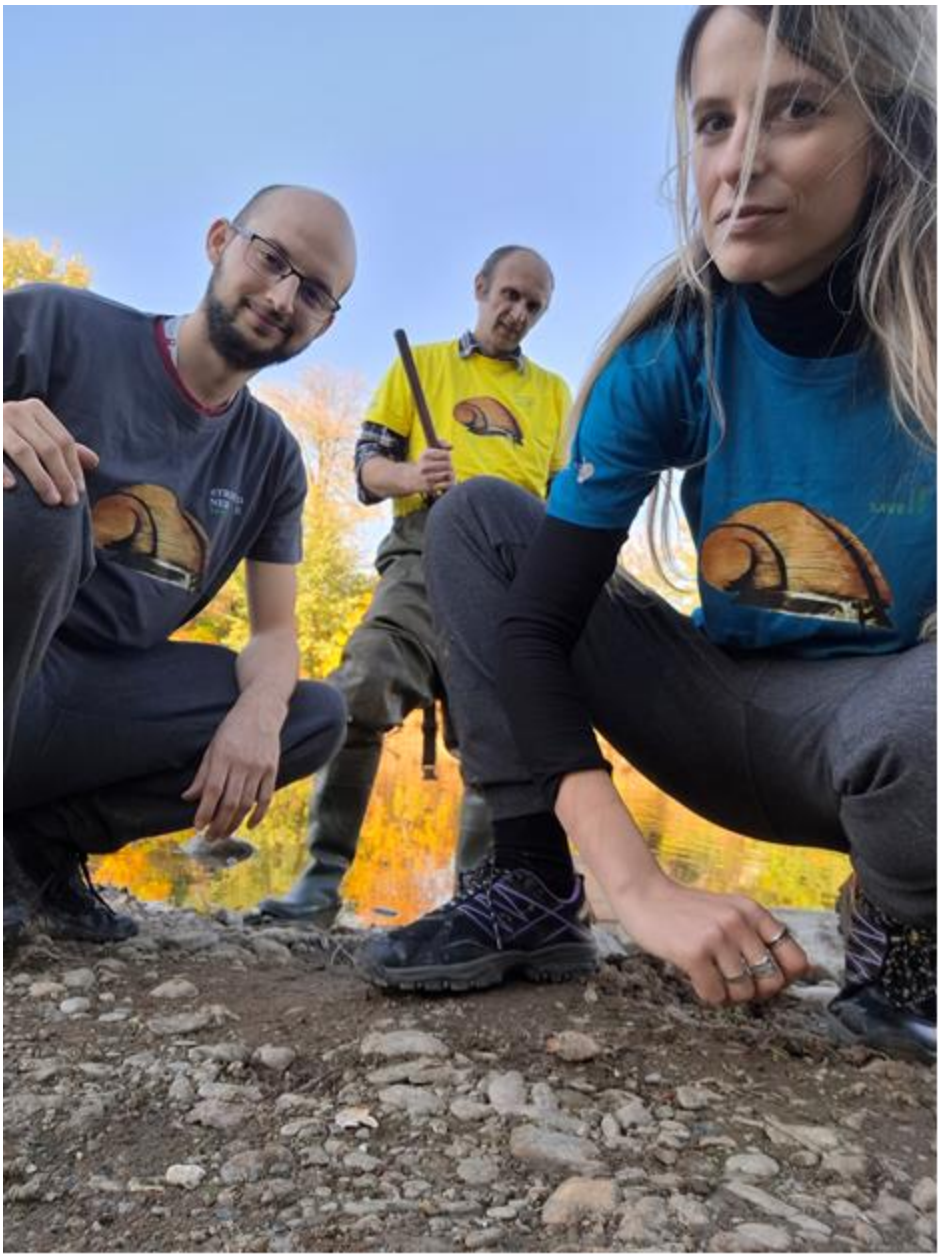


Photo 38: Field researchers