

## Final Evaluation Report

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Your Details	
<b>Full Name</b>	Jelena Šeat
<b>Project Title</b>	Setting Up the Base for True Bug (Heteroptera) Conservation and Insect Monitoring in Sandy Grasslands of the Pannonian Region
<b>Application ID</b>	39941-D
<b>Date of this Report</b>	12 <sup>th</sup> January 2025

**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Inventory of true bug fauna in remaining sandy grasslands in Hungary and Serbia			+	The inventory provided updated data on true bugs and helped to revise old species lists.
Mapping of sand specialists and rare steppe species (target species)			+	The results of inventorying and mapping were crucial for the selection of target species which were used in the habitat evaluation protocol.
Creating a protocol for the evaluation of sandy grasslands based on true bug indicators		+		We have all the data collected by the monitoring experiment, but we have not finished the analyses which should help finalize the protocol design.
Promotion of sandy grasslands and their unique true bugs			+	We achieved what was planned by giving lectures and publishing a blog post and a brochure for the general public.
Publication of the scientific results		+		This objective is associated with the third one; we are still working on data analysis and preparation for publication.

**2. Describe the three most important outcomes of your project.**

- a) The most important outcome of the project was a collaboration between Serbian and Hungarian researchers and conservationists. This was a priceless experience, especially for young colleagues who never had the opportunity to meet each other and work outside of their home countries.
- b) We reintroduce the total inventory of true bugs in sandy grasslands in Serbia and Hungary after decades of neglect of a basic method to study fauna. This was a necessary step before any monitoring and/or conservation planning because sandy areas are rapidly changing with the introduction of new invasive plants and shifts in land and water management in those areas.
- c) We can confirm that seven out of twelve target species (*Chorosoma gracile*, *Derephysia cristata*, *Emblethis ciliatus*, *Menaccarus arenicola*, *Odontoscellis lineola*, *Pionosomus opacellus* and *Spathocera obscura*) live in Ram-Golubac Sands, the only big sandy area in Serbia without any legal protection at the

national level. We hope the project results are a strong argument for the authorities to reconsider the status of this area in the future.

### **3. Explain any unforeseen difficulties that arose during the project and how these were tackled.**

The biggest obstacle during the project was the crisis in 2023 we had with the migrants and refugees at the Serbian-Hungarian border. This area was occupied by the international police forces for months and it was unsafe for researchers to enter the protected area of Subotica Sands in Serbia and the southernmost parts of the Kiskunság National Park in Hungary. Fortunately, at the beginning of 2024, the situation stabilized and we could finish our work there without any further problems.

### **4. Describe the involvement of local communities and how they have benefited from the project.**

The project did not aim to involve directly local communities. Sandy grasslands of the highest conservation importance are protected in Serbia and Hungary, locals use them as popular recreation areas and they are familiar with their biodiversity. However, 'lower quality' sandy grasslands were afforested or converted to arable lands decades ago, and these areas were the focus of discussion through our promotional and educational activities. We highlighted the changes which are needed to preserve most of the natural values, as well as agricultural and forestry practices that are the most sustainable and the least threatening to fragile sandy grasslands.

### **5. Are there any plans to continue this work?**

My postdoc work in Hungary is focused on studying insect ecology in the changing forest-steppe mosaics of the Kiskunság Sand Ridge and how different restoration trajectories affect insect communities. The conclusions drawn from my postdoctoral research will provide valuable insights into effects of sandy habitat changes on true bugs and other insects. Ultimately, the gained knowledge from this project and my postdoctoral work will be used for more specific purposes, such as species conservation proposals.

### **6. How do you plan to share the results of your work with others?**

Our project activities and what it was aiming for were shared through social media, my personal Facebook account and HabiProt accounts (Facebook and Instagram). We also wrote a blog post on the HabiProt website.

The scientific results of our project will be available as research articles to our colleagues interested in true bugs, insect ecology and conservation. Some members of the team participated, or are planning to participate, in conferences and present our results there as well.

The data on species recorded in Serbia will be shared through the Alciphron database on insects of Serbia, a HabiProt's citizen science project.

We sent reports on our results to authorities in charge of nature conservation in Serbia and Hungary and managers of protected areas. In the reports, we gave suggestions on how to improve habitat management to preserve species of conservation importance.

### **7. Looking ahead, what do you feel are the important next steps?**

The next step for us is to finish analyses and publish our work. We are planning two publications from this project, one focused on the conservation status of important species (specialists and rare steppe species) in the Pannonian sandy areas, and the second should assess the bioindicating potential of true bugs in sandy grasslands. The results of these analyses should help in creating an evaluation protocol for sandy grasslands based on true bugs.

### **8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

The Rufford logo was exposed in all our promotional materials (printed brochures and T-shirts), but also, in MS PowerPoint presentations and blog post.

### **9. Provide a full list of all the members of your team and their role in the project.**

Jelena Šeć (project coordinator) – Project idea and research design, true bug collecting and identification, data analyses and scientific writing, reporting to authorities, blog post and brochure writing.

Bojana Nadaždin – Assisting in true bug collecting and identification, administrative and financial management.

Mirjana Ćuk (Serbia) and Alida Anna Hábczyus (Hungary) – Assisting with project proposal writing, assisting with brochure writing, selecting sampling sites and locations for monitoring experiment.

Ivan Tot, Mihailo Vujić, Botond Magyar – Monitoring of pollinators in both countries.

Several students from Hungary and Serbia – Assisting in collecting true bugs and monitoring of pollinators.

Csaba Tölgyesi – Supervising data analyses and scientific writing.

### **10. Any other comments?**

Running the project was a bit logistically complicated because we had to cross the Serbian-Hungarian border many times and negotiate with many people to organize our fieldwork. Anyhow, we managed to finish our tasks without serious complications. It was challenging to coordinate all those people in the field, gather them at the same place and at the right time, and do the job. This project was a bit demanding to organize but immensely exciting. After all, I think it was worth the effort, and I hope that my Serbian and Hungarian colleagues' collaborations will continue in the future.