

Project Update: June 2023

Based on the Rufford Foundation grant for the project entitled "Monitoring and Assessment of the Serpentine Floristic Diversity with the Focus on the Endemic Species and *Paraceterach marantae* (L.) R. M. Tryon (Pteridaceae)", we present the project update for January to June 2023.

The objective of the species conservation project was to study and protect the population of the species *Paraceterach marantae* in order to conserve its habitat and improve the long-term sustainability of the ecosystem. In the past months, several activities were carried out to achieve the objectives of the project. The main activities carried out during the past period are described here.

The period from January to March was used to acquire materials needed to carry out the project. During this period, a camera with macro mode for photographing habitats and species, an external hard drive for storing and saving photos as a sort of virtual herbarium, boots for field work, and a PDA device for image editing and presentation were purchased. In addition to acquiring the equipment, the aforementioned period was used to research the status of endemic and threatened species that occur in the serpentine habitat according to literature data, as well as their endangerment status according to the IUCN.

The previous fieldwork was carried out during six field trips to determine the floristic composition of the Brdjanska Gorge area (Fig. 1 and Fig. 2) from the foot to the summit, as well as the abundance of *Paraceterach marantae* species. The first and second field trips were conducted 7th and 21st 2023, to record the species characteristic of the early spring aspect. The third and fourth field visits were conducted on 10th and 23rd April 2023, to record species characteristic of the late spring aspect. The fifth field was conducted on 20th May 2023, to list species characteristic of early summer aspect. The sixth field was conducted on 18th June 2023, to list species characteristic of the summer aspect.

In the first months of the project, we focused on detailed research of the species. Field surveys were conducted to identify habitats and determine the distribution of the species. We kept an observation log and recorded information on the abundance of the species. We contacted local authorities to obtain relevant information on previous research and existing species conservation measures and recommendations.

During each field trip, plant species were photographed, and some were mapped. Upon return from the field, species were identified and other factors affecting species abundance, such as the presence of invasive species.

To date, more than 30 plant species have been identified, belonging to different families, and exhibiting different life forms; there are also species with a certain degree of endangerment and protection categories, which are listed in the final report.

The following species have been identified so far: *Halacsysa sendtneri* (Fig. 3), *Paraceterach marantae* (Fig. 4), *Aethionema saxatile* (Fig. 5), *Potentilla arenaria* (Fig. 6), *Sedum serpentini*, *Silene bupleuroides*, *Silene longifoliam*, *Sclerantus serpentini*, *Sesleria rigida*, *Schrophularia tristis*, *Scabiosa fumarioides*, *Bromus fibrosus*, *Veronica*

jacquini, *Polygala supina*, *Rumex acetosella*, *Stachys recta*, *Stipa novakii*, *Chrysopogon gryllus*, *Silene paradoxa*, *Allium flafum*, *Medicago prostrata*.



Figure 1. Brdjanska Gorge. Figure 2. Vegetation of Brdjanska Gorge.



Figure 3. *Halacsya sendtneri* (Boraginaceae). Figure 4. *Paraceterach marantae* (Pteridaceae).



Figure 5. *Aethionema saxatile* (Brassicaceae). Figure 6. *Potentilla arenaria* (Rosaceae).

As for the species *Paraceterach marantae*, each individual found in the Brdjanska Gorge area was mapped to obtain data on the abundance and distribution of the species. Based on the previous population numbers, it was assessed whether the

population of the mentioned species is progressive or regressive, while the factors that may influence the studied species in the Brdjanska Gorge area were monitored.

Permission was requested to install an information board in the Brdjanska Gorge. On this occasion, we were in contact with the Environmental Protection Agency and the Forest Service in Gornji Milanovac, on whose territory the gorge is located, as well as with the Forest Service in Kragujevac. The Serbian Forest Service has been contacted, which is responsible for issuing a permit for the installation of an information board at the site in question. We are still waiting for permission. The banners to be placed in the near future and the stands for their placement have been made. (<https://www.instagram.com/reel/CslwVaLuQcS/?igshid=MzRIODBiNWFIZA==>)

During the first 6 months of the project, various activities were conducted to research, protect, and raise awareness about the conservation of the species. These efforts have contributed to a better understanding of the population, habitat, and threats facing the species. Further conservation efforts and collaboration with local communities are crucial for the long-term conservation of this species and will be implemented in the coming months.



Figure 7. Dumpyard near the gorge. Figure 8. Waste in the habitat.



Figure 9. Nenad Zlatić - Rufford grant recipient.