

The Rufford Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details

Your name	Nikola Vesović
Project title	Ground beetles (Coleoptera: Carabidae) of the Đerdap National Park (north-eastern Serbia): preliminary diversity assessment and conservation
RSG reference	21774-1
Reporting period	12 months (April 2017 – April 2018)
Amount of grant	£5000
Your email address	nikola.vesovic@gmail.com
Date of this report	29 March 2018

1. Please 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
Check-list of ground beetle taxa inhabiting the National Park				We have complete checklist of Carabidae in the park (based on one-season integrative research). These data are going to be published in near future.
Additional data on the biology and ecology of carabids in the National Park				We do not have this objective fully achieved for all species found in the park, but future analyses of the collected material will surely reveal more information.
A list of candidate taxa potentially worthy of protection among carabids				We found one species for the first time in Serbia, and two species with the first precise record in Serbia, along with numerous new distribution details for other species.
Examining possible habitat-disrupting circumstances in the National Park				This objective is partially completed because of limited time we have to fully assess most of the factors, but the biggest threat for ground beetles is definitely habitat destruction.
Stimulation of scientific enthusiasm of biologists for nature conservation and education of citizens				We are fully satisfied with this objective because the response of young biologists and local communities was excellent during the project constantly.
Presentation of results				Results are already presented twice. We plan to present them once again in September 2018, before publishing

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Considering some negative influences on final outcome of the project, there were both natural and anthropogenic factors. Namely in the middle of April 2017, it was unusually cold, even with almost freezing days in some parts. Contrary to that, summer was extremely hot and dry, with many days in succession with temperatures way exceeding 40 degrees celsius during July and August with almost no precipitation. Negative human impact was recorded in the locality of Golubac, just

outside of national park's west border (which stayed incomplete till the end of season for this reason) where unknown perpetrators constantly ruined our pitfall trap sites, despite our efforts to inform the citizens about our ongoing research.

3. Briefly describe the three most important outcomes of your project.

I – Carabid diversity assessment (as bio-ecological outcome) – specific data on ground beetles inhabiting national park are obtained for the first time (check list, sex composition, seasonal activity, habitat preference).

II – Conservational outcome – We monitored occurrence of rare and/or threatened carabids and gathered new data and experiences on them as well as on various habitat conditions in NP, which ultimately can help in species protection. Also, we assessed several threatening factors in the area (forest fires caused by human neglect, alteration of river banks, etc.).

III – Educational outcome – project activities are presented to general public, local inhabitants, biology/ecology students and member of biological scientific communities of Serbia. We believe that we have increased the awareness of the people and deliver a message about the necessity to protect ground beetles (by protecting their natural habitats). Đerdap National Park once again is proven to be one of the finest and richest natural heritage areas in Serbia. Local communities in the national park were our special target, simple because they are the people that actually coexist with Đerdap's biodiversity and habitats.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

We carry a very positive experience considering response of local communities and their wish to understand our efforts and in a way to contribute during our field visits. For instance, several people of small fishing community regularly accompanied our team in sample collecting during evenings and even at night in town of Donji Milanovac. Due to the fact that the whole town has about a 1000 permanent inhabitants, already after our third expedition the majority of people knew about our ongoing research in their natural environment.

5. Are there any plans to continue this work?

Absolutely, now that we have preliminary diversity assessment of ground beetles in the area, a few new conservational questions have been raised [highlighting local habitats where rare populations of carabids occur (by setting information boards and signs and preventing any human activities that can alter the habitats) and to better explore caves, layers of deep soil and leaf litter]. We see an opportunity to solve these questions and carry out additional conservational measures through the next application, potentially during 2019 or 2020.

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

The fact that many people from Belgrade, other parts of Serbia and even different countries already contacted us about the project and our experiences, by itself partly answers to this question. It shows that the project had impact already before we have any relevant results. But more specifically, we will publish our results in a scientific journal. In the next several years, a monograph on Đerdap's carabids is also a real possibility. Presenting our current results in Belgrade, Donji Milanovac and upcoming scientific meetings is a good way to share our findings.

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

We used the grant over 12 months. We have planned in detail our time schedule and we did not have any unplanned situations in that manner. Ten bigger field expeditions were organised (from 7th April till 13th October 2017) with several smaller ones. Considering cave expeditions, there were two bigger (in June and November) and a few smaller ones as well. After completion of field work, collected material was identified in the laboratories of Institute of Zoology, University of Belgrade, Serbia for the next three months. The final 2 months we analysed our results.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used*.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Project preparation and promotion	£400	£354	+£46	Posters, T-shirts, badges, mugs, lectures...
Field trip equipment	£98	£80	+£18	Shoes, tweezers, magnifiers, brushes, gloves...
Pitfall traps	£90	£88	+£2	Plastic cups, hand shovels, alcoholic vinegar, baits...
Storing (+laboratory) equipment	£140	£708	-£568**	Entomological boxes, mounting boards, pins, tubes, jars, repellents, etc. (from Czech Republic)
Portable GPS device	£140	£256	-£116	Item purchased: Garmin eTrex 30x (+rechargeable batteries)
All travelling costs	£1400	£1394	+£6	Bus tickets, fuel, including expenses for volunteers
All accommodation costs	£1130	£731	+£400	For 36 days, including expenses for volunteers

All daily allowance costs	£1152	£802	+£350	Food, drinks including (for 36 days) expenses for volunteers
Macro photography equipment	£450	£427	+£23	Item purchased: Sigma EM-140 DG Macro Ring Flash for Nikon AF (+rechargeable batteries)
Totals	£5000	£4841	+£159	The rest of money should be spent for official presentation of the results in the park's headquarters this summer

* Since the local exchange rate used in the project had very fluctuating values during past 12 months, we calculated the average exchange rate used for our expenses: RSD134.831 (Serbian dinars) for £1.

** Biggest differences are in storing equipment section [it is spent more than planned, because we couldn't predict a volume of insect collection (but we started to realise that already in May). Therefore we needed much more equipment than initially anticipated], but we compensated our expenses mainly by finding slightly lower accommodation costs and lower daily allowance costs.

9. Looking ahead, what do you feel are the important next steps?

It would be great to publish our data gathered so far, as scientific contribution of the work. The following step could be detailed assessment of potential threats and issues and propose measures in order to protect habitats (and consequently the species). For example, we report great diversity of species in riparian zone along the Danube bank as well as along the banks of the smaller tributaries (especially in gorges and canyons). One of the reasons for such state is constant moisture during the whole season which suits the most for majority of ground beetles (unlike the steep, dry, limestone habitats where the diversity of carabids drastically declines during the summer months). In some parts, it is obvious that river banks are altered by human activities (raising camps, concreting the bank, etc), which could have negative impact on faunal assemblages. Finally, as already mentioned in this report, more attention should be paid to the study of underground and cave habitats, because they are the areas in which we can expect important discoveries regarding endemism and species richness in the region.

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

We used every opportunity to present The Rufford Foundation and its support towards nature conservation. The Rufford Foundation logo appeared in every appropriate occasion (oral and poster presentations, on promotional material, etc.). The Rufford Foundation will be acknowledged in a future scientific publication(s) based on data collected during this project.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Team members:

MSc. Nikola Vesović: project promotion, organisation of field expeditions, management of volunteers, collecting ground beetles (all collecting sites except Majdanpek and Faca Šora pit), insect determination and other laboratory analyses.

BSc. Saša Nestorović: project organisation and promotion, collecting ground beetles (Donji Milanovac, Porečki zaliv, Lepenski Vir, Golo Brdo) and involvement of local communities.

Supervisor:

Prof. Dr. Srećko Ćurčić: helped us in a spring field trip, also during a two-month period of insect identification (early 2018), and shared his experiences and gave us several helpful advices considering various project activities.

Others who participated and helped us in project implementation:

Đurđe Đuković: biology student, field expeditions

Vojislav Sokolović: biology student, field expeditions

Andrea Mićović: biology student, field expeditions

Bogdan Miloradović: biology student, field expeditions

Katarina Kulić: ecology student, collecting ground beetles (Majdanpek)

Janja Ristić: biology student, collecting ground beetles (Golubac)

BSc. Miloš Kuraica: led the cave expeditions in Buronov ponor and Faca Šora Pits together with other speleologists (**Marko Avdić, Dušan Starinac, Aleksandar Ravas, Matija Petković, Igor Olarić, Igor Bilas & Jovan-David Đorđević**), all members of technical support team of Mountain Rescue Service of Serbia.

We are also thankful to complete staff of Đerdap National Park, especially to director Mr. Lazar Mitrović for his attentiveness towards our project. Many thanks go to numerous rangers who helped us in locality selection and technical support during the whole field work season as well as many members of local communities who made our work and stay comfortable and pleasant.

At the end, it is worth mentioning that more students applied to volunteer than we even have the capacities to support, also one of the indicators of the strong educational influence of our project.

12. Any other comments?

At the end, we would like to express our deep gratitude and appreciation for the given opportunity and support by The Rufford Foundation and everything they have done around the world in order to support young conservationists, and above all to help protecting the nature. In every sense, this project was extremely significant experience for us.