

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	Vuk Iković
Project title	Assessment of Demographic Structure and Protection Measures of the Balkan Terrapin (<i>Mauremys rivulata</i>) in Montenegro
RSG reference	23387-B
Reporting period	March 2018 to February 2019
Amount of grant	£10,000
Your email address	vukikovic@gmail.com
Date of this report	29 March 2019

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
Field study of the Balkan Terrapin in Budva, Tivat and Herceg Novi in order to obtain data on density, population size, sex ratio, by Capture-Mark- Recapture (CMR) method (lasting 40 days).				<p>During 40 days of fieldwork we captured 988 individuals of which 55% was caught again.</p> <p>All necessary measures were taken and individuals safely returned to their habitat.</p> <p>Number of population in Budva is estimated at 400, in Tivat at 300 and in Herceg Novi at 600.</p> <p>The number of registered females is similar to the number of males. The biggest number of juveniles was found in Herceg Novi, where they make up a minimum 20% of the population.</p>
Defining presence of Balkan Terrapin on localities on which its presence is not confirmed yet (such as: river Klezna, river Nemila, Sasko lake and Skadar lake). In this way we will also determine the potential threats in these habitats and check whether the communication between habitats exists; (12 days).				<p>The presence of Balkan terrapin was confirmed on the Shasko Lake and Klezna river, but not at the Skadar Lake and river Nemila.</p>
Collecting samples (top of tail) for DNA analysis				<p>The samples for DNA analysis were collected at all three locations, exactly from all three explored, exactly followed population (Budva, Tivat, Herceg Novi). As sample, the top of the tail was taken (2-3 mm of length). In total, 20 of samples per each population were taken. The tail of turtles does regenerate, so this method does</p>

				not affect negatively the health of captive individuals.
Radio monitoring of specimen (telemetry)				Monitoring of movement of 20 individuals was done. This confirmed which kind of migratory routes they use the most and which part of habitat they prefer the most, exactly the type of the habitat where they stay the most. These are channels during the spring and slow flowing rivers during the summer and autumn.
Updating of a project website, preparing of brochures, posters, and T-shirts; for raising awareness and educational purposes and duplication of brochures, posters and T-shirts for raising rising and educational purposes. VII month				All necessary materials, needed for visibility, higher efficiency and ecological informing of the citizens were done. Information about research are available on the website: http://rivulata.drustvoekologa.me/
Holding lectures in primary schools in Herceg Novi, Kotor, Tivat, Budva, Bar and Ulcinj. These activities are essential for raising awareness				In total, 58 lectures were held in 16 primary schools on the coast territory in Montenegro. With schools in the immediate nearness of habitat of Balkan terrapin, cooperation has been established.
Work with local nongovernmental organizations				The communication with three local NGOs, has been established. Thanks to their activism, we took a part on the meeting, who was tracked by <u>media</u> . At this meeting, we represented ecosystem services of the rivers. On the coasts of these rivers live local population.
Making meetings with decision makers on local level (six costal municipalities), Environmental Protection Agency and Ministry of Sustainable Development and Tourism where we will present the results of the				We realised six meetings, in six costal municipalities. These meetings were organised with advisors for environment. The project was presented to the representatives of Environmental Protection Agency and Ministry of Sustainable Development and Tourism. On this meeting, the concept of Action Plan for

<p>project and initiate an agreement on an Action plan for conservation of Balkan Terrapin. Decision-makers will be presented to the conservation problems and the problems of illegal collection of turtles and the need for the establishment of temporary shelters for tortoise seized at the borders</p>			<p>Conservation of Balkan Terrapin was presented. The Agency showed willingness to take a part in drafting and formalising the plan, as document whose recommendations will be incorporated in a key documents for the protection of environmental for costal area of Montenegro.</p>
<p>Broadcasting on radio and TV programs in order to better inform and educate public</p>			<p>We hosted at two radio stations and three TV <u>programmes</u>. These two TV <u>programmes</u> are shows which are counted in top 10 the most viewed shows/programmes in Montenegro. Some magazines have transmitted <u>news</u> about our project.</p>
<p>Writing scientific paper based on fieldwork data</p>			<p>Scientific paper is in the processing stage, apropos in the processing of mathematical data analysis and comparison with similar researches in Mediterranean.</p>

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

- Rapid increase of rainfall during the end of September and October 2018 delayed the final field activities. This is the main reason why the project was completed with a delay of about a month.
- Equipment for radio monitoring of specimens (telemetry) could not be found on the Montenegrin market. Ordering this equipment from abroad was not possible, because it would be delayed. For this reason, this equipment was borrowed from colleagues who are involved in similar environmental research.
- Banned fish hunting is present in Budva (Jashka River). Due to illegal activities, the use of illegal fish traps has also killed freshwater turtles. Because of that reason, status determination of the population of the Balkan terrapin at Jashka River was difficult because some of the individuals which were recorded during 2017 was founded drowned in the traps. It was the reason to

alarm the inspection services. One month later we didn't have problems like that i.e. we have not encountered traps in the river.

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

1. The size, dynamics and structure of populations of Balkan terrapin at three sites of the coastal area of Montenegro has been done. Detailed distribution of Balkan terrapin in Montenegro has been done. Thanks to these data, the process of Environmental Impact Assessment and Strategic Environmental Assessment will be improved and it will be the basis for defining potential NATURA2000 sites (areas) which is obligation of Montenegro in accordance with The Habitats Directive (92/43 / EEC).
2. Agency for environmental protection expressed the need to cooperate with us on the development of Action Plan for Conservation of Balkan Terrapin. All the results of the project were presented to the Agency and responsible Ministry for the Environment and will be included in the spatial - urban plan which will be implemented this year for the coastal area of Montenegro.
3. We established a cooperation with primary schools located close to the habitat of endangered species Balkan terrapin. Schools included in their curriculum activities to inform students about natural habitats and endangered species of their region. Students will hold several classes each year in nature and will also have guest lecturers on this topic. Participants in the project will be involved in maintaining classes in nature.

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

The local population was introduced through communication at the site during data collection and during round tables where local community representatives participated. The local peoples were involved in providing the necessary information in order to facilitate the determination of the distribution. They were also very useful for easier identification of the problem of poaching.

The key benefit for the local community is reducing or excluding urbanisation near the river flows thanks to the data of this project. This will enable the environment to have a higher quality and opportunity for the development of sustainable tourism.

Citizens also have made contact with us and could easily (with our help) to communicate with inspection services in order to protect rivers from waste water and poaching.

Students who are part of the local community are more likely to appreciate the water habitats of the Balkan terrapin, which is the most important thing because the nature could be best managed and protected by locals.

5. Are there any plans to continue this work?

During the field work on several location we have noticed that European pond turtle is endangered at the European level due to intensive urbanisation and intensive agriculture. Also the species pond slider has been recorded, one of the top 10 invasive species in the world. Therefore, we plan to continue working on this topic in order to identify condition of the endangered European pond turtle and to suppress the import and expansion of pond slider. Based on these data, it would finalise and expand the Balkan Terrapin Action Plan, which would become a plan to protect all freshwater turtles.

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

The first biggest presentation of collected data was on Rufford Conference "Explore and Protect the Natural Beauty of Balkans". Conference was held in Silver Lake, Serbia, 27-28 September, 2018.

During 2019, the responsible institution for nature protection will organise several public debates and tribunes where we will present the results of the project in order to preserve the water habitats in Budva, Tivat and Herceg Novi (coastal towns of Montenegro). The data will be presented with the scientific work which is currently in the stage of processing. Also, in the case of organising scientific meetings in the sector of biodiversity protection and management of water habitats, we will apply as participants in order to presenting the achieved results.

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

Month	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th
Fieldwork	X	X	X	X	X	X	X	X	X	X	X	X
Defining presence of Balkan Terrapin		X	X	X								
Collecting samples for DNA analysis		X	X	X								
Radio monitoring of specimen			X	X	X	X	X	X	X	X	X	X
Preparing of brochures, posters, and T-shirts				X	X	X						
Duplication of brochures, posters and T-shirts							X					

Holding lectures in primary schools								X	X			
Work with local NGOs		X	X	X	X	X	X					
Meetings with decision makers											X	X
Broadcasting on radio and TV programs									X	X		
Writing scientific paper											X	X

The project was planned for implementation from March 2018 to January 2019. Due to unfavourable weather conditions during the autumn of 2018 and due to the extensive field-work of 78 days, the project lasted a month longer.

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
Website update	171	171		
Cost of communication	120	283	+163	In 2018 there was an increase of VAT tax, which caused an increase in the price of telecommunication services. Also, due to the large number of field work and work with local community and schools, we did most of the communication by telephone. This is because all of the activities are coordinated from Podgorica, which is far from some coastal areas about 130 kilometres.
Meetings: food and travel of participants	131	131		
T-shirts (design and print)	296	296		

Leaflet preparation, posters (material, photos, design and print)	230	230		
Daily allowance for lectures in elementary schools	85	85		
Travel expenses for lectures	110	165	+ 55	Prices for the fuel in some period of year were higher than expected.
Expenses of DNA sampling	451	451		
Radio monitoring equipment	986	0	- 986	Radio monitoring equipment was not available on the Montenegrin market. It was not profitable and time-feasible to be ordered from abroad. That's why we borrowed for free this equipment from colleagues who are involved in similar research. We redirected this money for the purchase of additional equipment (Floating Traps), communication costs and transportation costs that were greater due to the increase in fuel prices.
Other equipment : bait for tortoise, fishing boots, handsaws for marking on shell, 3 x bottles of 96% alcohol, 2 x callipers	110	135	+25	Prices for the consumables were higher than expected.
Floating traps for catching individuals	657	890	+233	We needed a larger number of nets – floating traps for capturing tortoise. For this reason, we have spent an additional 115 pounds. Thanks to a larger number of the trap nets, we have made more quality data.
Travel expenses for field-work	2,554	2,981	+427	Prices for the fuel were higher than expected.
Daily allowance for field-work	4,099	4,185	+86	Daily allowance were higher by 86 pounds, several volunteers of biology students took part in several field works.
Total	10000	10003	+3	

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

1. Creating and adoption of the action plan to protect the freshwater turtles of Montenegro in cooperation with the Environmental Protection Agency and the Ministry of Sustainable Development and Tourism;
2. Collection of data about outspread of the invasive species pond slider. Presenting objective threats from this invasive species to responsible institution. Definition of measurements for removing individuals of the pond slider from certain rivers of the Montenegrin coast. Insisting on state institutions to officially ban import and breeding pond slider in Montenegro.
3. Continue cooperation with colleagues from Croatia, Macedonia, Greece and Albania for the purpose of regional protection of freshwater turtles and its habitats.
4. Research of the European pond turtle as a species endangered in Europe.
5. Monitoring of the process of incorporation of freshwater turtle habitat into the European ecological network NATURA2000.
6. Monitoring further urbanization on the Montenegrin coast and monitoring the development of mitigation measures populations of Balkan terrapin.
7. Continuation of the work with the local community as a key stakeholder for the protection of water habitats

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?

The Rufford Foundation logo was used during the whole duration of the project. Logo is printed on the brochures, posters and t-shirts that were prepared during this project.

RF received publicity during this project, both on the TV programmes and broadcasts on the local radio stations, during our fieldwork, lectures on several primary schools and meetings with the representatives of state institutions.

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

Iković Vuk, member of the NGO Montenegrin Ecologists Society, PhD student at the University of Belgrade;

Role in the project:

- coordinator of project activities,

- administrative framework
- monitoring project development
- participation in field-work activities
- purchase of necessary equipment for work

Gvozdrenović Slađana, member of the NGO Montenegrin Ecologists Society, PhD student at University of Montenegro;

Role in the project:

- methodological approach
- field activities for determining the distribution of Balkan Terrapin in Montenegro;
- data analysis,
- evaluation of data

Popović Jelena, member of the NGO Montenegrin Ecologists Society, master student at University of Montenegro;

Role in the project:

- working with the local community - households living near aquatic habitats
- working with a local NGO
- networking of local stakeholders (local communities and local NGOs) with state institutions,
- work with primary schools - students,
- participation in field activities.

Mićanović Andrijana, BSc, student of specialization studies of ecology at the Department of Biology, University of Montenegro.

Role in the project:

- field activities in order to determine the size, structure and dynamics of populations of Balkan terrapin,
- defining of the endangerment factors of the Balkan Terrapin and its habitats,
- communication with decision makers and responsible institutions and services from sector for environmental protection.

12. Any other comments?

The realization of this project has managed to make the problem of endangering freshwater habitats and their species visible in Montenegro. This is mostly merit of Rufford Foundation.

We are very grateful to the RF because it has recognized the problem of this kind. RF is the first foundation that funded the work on this problem. We also hope Rufford Foundation will continue the funding of these objectives and activities in order to resolve the problems and prevent the disappearance of this important species.

