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	Admir Aladžuz
Project title	Population density and spatial distribution research of the endangered species Martios snow vole for the creation of a new conservation strategy
RSG reference	17589-1
Reporting period	March 2016 – March 2018.
Amount of grant	4921 GBP
Your email address	admir.aladjuz@gmail.com
Date of this report	

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
Determination of current species population size and range in the Dinaric Alpine mountains in B&H.				The population size was determined for the chosen pilot areas on 10 mountains.
Creation of first database (GIS) of the species population size and range.				Database was created and delivered to the relevant Entity Ministries of Environment and their agencies.
Development of methods for successful conservation and protection of the species.				Since the data about species ecology was partly collected, the developed methods for successful conservation were not enough due to the lack of data about hibernation, movement, behaviour etc. The more research about ecology of the species will be needed and must include continuous observation on one chosen site, GPS tagging and trail-camera recording.
Raising public awareness and informing the decision makers about the species conservation issues, as well as informing them about current state and threats for this species in order to influence its protection.				The awareness raising was done by presenting the project results to the various public like: To biology students at two biological camps in Bosnia and Herzegovina (Stolac 2016 and Rujište 2017.); The protected areas managers and Environmental Ministries at the PA workshop in Sarajevo. To the academic community by publishing the scientific papers in journals. To the ministries by creating the database and reports.3 The result of this was creation of interest in small mammals on the decision maker level (government) and they started to approve few grant for small mammal population research.

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

1. The greatest difficulty was the presence of minefield which does not allow the cover of some area of interest in this research;
2. The unexpected weather changes in the mountains even during the summer season make some difficulty in setting the traps and getting to the chosen location;
3. Forest and bush fires also made some difficulty, especially in southern four mountains (Prenj, Velež, Čvrsnica and Crvanj);
4. During the importing of purchased equipment there were some difficulties because of slow customs administration which delayed start of the project for about 2 months.

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

Outcome 1 - Determination of current species population size and range in the Dinaric Alpine mountains in B&H. This was the first ever conducted species population size research in Bosnia in last 30 years. This is wary important regarding the species current conservation status and unknowing their population trend.

Outcome 2 - Creation of first database (GIS) of the species population size and range. This was the first ever created digital database for the species.

Outcome 3 - Raising public awareness and informing the decision makers about the species. The decision maker was not aware about species current population number and trend. They realised that the small mammal species including *Dinromys bogdanovi* must be monitored frequently. Still there are some difficulties regarding the available funds for some practical on-field research, but a small amount of funding was approved for the research of small mammals in some protected areas. The students were also informed about the research (in VI International biology camp in Stolac) and during the VII International biology camp in Rujište (in 2017.) they participated in the on-field research.

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

The most important beneficiaries were:

- the Federal Ministry of Environment and Tourism.
- the Ministry of Spatial Planning, Construction and Ecology of Republic of Srpska,
- Republic Institute for Protection of Cultural, Historical and Nature Heritage of Republic of Srpska,
- The National Park Sutjeska Management.

These beneficiaries received the first active database of the species and for the first time, they know the threat level of species and how fragile their ecosystem is.

Other important beneficiaries were the biology (ecology) students. At two International Biology Camps (Stolac and Rujište) they received the necessary information about the species, their threat level and on-field training how to conduct the proper monitoring of the species.

The final beneficiaries were the managers of the protected areas in B&H. They received the information about presence (even potential presence) of the species in their protected area and what they need to do in the future to conserve and protect the species.

5. Are there any plans to continue this work?

The monitoring of the species is a must due to its fragile habitat and decreasing population trend. However, the monitoring needs to be conducted for a minimum 2-5 years but after fully knowing the ecology of the species (feeding habits, shelter type, seasonal movements etc.). Knowing the ecology will certainly help the future monitoring and creation of national conservation strategy.

The recommendations for the future work would be that the species ecology research must be conducted frequently on fewer locations (the minimum recommended locations are three) with frequent trapping, marking and even recording with trail-cameras (where applicable). The results from the first research suggest that the best 3 locations would be:

1. Mountain Trebević – the most abundant location (*locus typicus* of the species).
2. Mountain Bjelašnica – second most abundant location.
3. Mountain Visočica – control location for the species.

The first 2–year monitoring showed the rapid decrease in population numbers on each mountain. On most mountains the species was not caught which is clearly so alarming that urgent conservation at a national level is needed. The reports to the ministries suggest that the category of the species needs to be changed to the Endangered (EN) level.

It is highly recommended that the species ecology research starts as soon as possible because of rapid population decreasing and intense competition with species *Chionomys nivalis* (Martins, 1842) which is, so far, unfavourable for the *Dinaromys bogdanovi* (Martino, 1922) species.

Next conservation effort is to research the ecology of the species. The project team managed to get a grant from the Mohamed bin Zayed Species Conservation Fund which awarded the team with grant for the project: “Improving the knowledge of *Dinaromys bogdanovi* (Martiono, 1922) ecology for the purpose of developing successful conservation strategy”. The aim of the project is to research its ecology on selected sites in order to create the conservation strategy.

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

The project report and the database is distributed to the relevant ministries, environmental agencies, and via media and publication of work. So far, one scientific publication was printed regarding the 1st year project results. The final result is planned to be presented at International Rufford Small Grants Conference "Explore and protect the natural beauty of Balkans on 27th and 28th September, 2018 at Silver Lake, Serbia.

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

The most of the funds were spent in the first month of the project where equipment for field research was purchased. Other higher costs included amortisation of the field vehicle and fuel costs. Over the on-field working some adjustments regarding purchase of the equipment were made but did not influence the budget or targeted equipment.

In addition, some costs were not spent like planned because of the free donations, and some of the products were bought while on discount. However, some of the costs were higher than anticipated, but did not influence on the budget.

Basic time scale and major activities and achievements are given in table below:

Period	Month Major Activities	Major Achievements
May 2016 – December 2016.	First trapping on 10 selected mountains	3 individuals caught: 2 on Mt. Trebević, 1 on Mt. Zelengora
December 2016 – May 2017.	Finalization of first year monitoring achievements. Planning monitoring in 2017th	Monitoring plan established.
May 2017 – March 2018	Second trapping on 10 selected mountains	6 individuals caught: 1 on Mt. Trebević, 1 on Mt. Treskavica and 4 on Mt. Bjelašnica
March 2018 – May 2018.	Finalization of second year monitoring achievements.	Field data elaborated and work on final report with publication was started.
May 2018.	Finalizing project final report	Project final report finalized and sent.

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 Leader	837	837	0	
Expert in Mountain ecosystems	635	635	0	
Local guide	353	353	0	
Accommodation (overnight stay)	450	450	0	The owe night stay were at the 10 locations for the three people making the price per night in amount of 15 GBP/person/night.
Field equipment costs	150	200	+50	Some of the field equipment were bought for the overnight stay in wild where no accommodations were available.
Transport (50 round trips to Mountains) Fuel costs	436	477	+41	The exact amount of fuels was predicted by the price in 2016. The rise of fuel price was during the 2017 by establishing the excise on fossil fuels and a local transport fuel consummation on mountains.
GPS device	320	233	-87	The desired GPS device was bought during the discount at the store.
Laptop/tablet	420	341	-79	Instead of laptop the tablet for the field work was bought. The tablet have the all performances and it was easier to working and carrying it on field.
External HDD	55	133	+78	The higher capacity HDD was needed (1TB). The price was calculated for the 500 MB capacity HDD.
Procurement of live traps	750	887	+137	Because of donation of 10 LFG Large Sherman traps the rest of 40 (more expensive traps) were purchased in order to have the 50 same traps. This increase the expected costs.
Traps shipping costs	210	379	+169	The new tax for costumes was imposed during the import (new Law) which increased the costs for 1/3 than expected.
Vehicle maintenance	100	469	+369	Because of the movement on difficult

Item	Budgeted Amount	Actual Amount	Difference	Comments
cost				road and terrain on the mountains, the tire braking was the issue several time and malfunction of spare parts for the used car.
Printing of materials (Maps, reports etc.)	30	10	-20	The necessary mine – field maps were given for free which reduced the printing costs.
CDs and DVDs	10	5	-10	The DVDs were bought on the discount.
Supply materials (GPS, batteries, etc.)	10	27	+17	During the purchase of batteries, the more expensive rechargeable batteries were bought together with the charger. This investment will decree the cost for the future.
Purchasing of topographic and orthophoto maps (digital and print)	51	0	-51	The Orto-photo maps were available from GPS device and the topographic maps were a free donation.
Pre-paid phone costs	50	52	+2	Due to the lack of pre-payed cards under the 5 BAM was the cause of this cost.
Maintenance of equipment	54	65	+11	The miscalculation during the budget creation and some unexpected gadget malfunction.
Total	4921	5552	+631	The major difference between the project budget amount and actual amount was in the vehicle maintenance costs. This is the major problem when working in isolated high mountains which does not have a proper road which can lead you close to your desired destination. This cost was over budget because of tire breaking and some malfunctions of spare parts (mostly connected to the cooler leakage problems and wheels problems.

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

The recommendations for the future work would be that the species ecology research must be conducted frequently on fewer locations (the minimum

recommended locations are three) with frequent trapping, marking and even recording with trail-cameras (where applicable). The results from the first research suggest that the best 3 locations would be:

Mountain Trebević – the most abundant location (*locus typicus* of the species), mountain Bjelašnica – second most abundant location, and mountain Visočica – control location for the species.

It is highly recommended that the species ecology research starts as soon as possible because of rapid population decreasing and intense competition with species *Chionomys nivalis* (Martins, 1842) which is, so far, unfavourable for the *Dinaromys bogdanovi* (Martino, 1922) species.

After that it is recommended a minimum of 2-5-year active monitoring on national level on all possible location with more traps and other equipment.

The project team managed to get a grant from the Mohamed bin Zayed Species Conservation Fund which awarded the team with grant for the project:

"Improving the knowledge of *Dinaromys bogdanovi* (Martiono, 1922) ecology for the purpose of developing successful conservation strategy".

The aim of the project is to research its ecology on selected sites in order to create the conservation strategy.

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

All produced material contained the logo of the Rufford Foundation, including the database and report which was send to the ministries. Also the logo of the foundation was used on the YouTube video of the species.

The name of the foundation was mentioned within acknowledgements on one published work in scientific journal so far, and it is in planned that every other published data contains the same.

The name of foundation was also mentioned in the national ecology TV show Ekologika on BHT 1 channel (Bosnia and Herzegovina State TV station).

I introduced the possibilities of Rufford Foundation to the young researchers in student camps held in Stolac 2016 and Rujište 2017 and also, to several young researchers which who showed interest in writing new projects proposals and do conservation actions.

11. Any other comments?

In Bosnia there are few or no projects regarding small mammal conservation, estimation of their population size and distribution. Currently, there is no data about

small mammals in Bosnia and Herzegovina. This project was the first creation of one database for a small mammal species. Even if a small mammals are among the most endangered group of animals (to human impact and climate change influence) in B&H they are not researched at all. The main problem is a lack of experts in the field and also a much-needed scientific equipment.

By funding this project, the Rufford Foundation helped to start small mammal research in B&H. The project helps popularising the small mammals among the decision makers and students so the one new small-scale projects were funded by the governmental agencies and the relevant ministries.

I hope that the Rufford Foundation will continue to help the small mammal researchers in the Balkans and in Bosnia if ever one of them apply to a project.

In the end of a comment, I would like to thanks the Rufford Foundation for the help in research, buying the new (so much needed) equipment and opportunity to research in my country. I hope this will not be the only project regarding the *Dinaromys bogdanovi* (Martino, 1922) and that, together, we can help this small paleo endemic living fossil to survive global and local impacts and thrive.