

The Rufford Small Grants Foundation

Final Report

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

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. 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. 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	Ivona Burić
Project title	Start of Karst Viper monitoring programme in Bosnia and Herzegovina
RSG reference	15311-1
Reporting period	September 2014 – December 2015
Amount of grant	£5000
Your email address	Ivona.burich@gmail.com
Date of this report	30.12.2015

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
Precisely determine distribution area of the subspecies/clades		X		<p>We visited eight new possible mountain localities that ecological niche model indicate like areas where vipers could be found: Maglič, Prenj, Ujilica, Čabulja, Bjelašnica (near Trebinje), Sitnica, Golija, Njogoš and three additional (Čvrstica, Vran, Ljubuša) but only on Ujilica we found the karst viper.</p> <p>This is specific species that needs precise weather conditions, we know that if the habitat is smaller or the grassland isn't good you need even 15 times to go to that site before you find one specimen.</p> <p>We tried very hard but we still can't determine precisely distribution area for this subspecies. Additional work should be done.</p> <p>While working on this project we realise that mountaineers could help us and on lectures and posters we invited them to involve and send us pictures of snakes on e-mail planiski.zutokrug@gmail.com that they see when they are hiking.</p>
Start a long term monitoring of <i>Vipera ursinii macrops</i> on Zelengora Mountain			X	<p>We started with monitoring in June 2015, unfortunately when we came on the site the snow was still there and we delayed the fieldwork and we went again in July and August 2015. We used capture-mark-recapture method and we measured and collect data about karst viper but also the data for adder that lives on the same polygon. Altogether we had 53 specimens. We planned to have one more fieldtrip in September 2015 to catch juvenile specimens that are important to have in the data set and to see if the population is healthy. In general when you work with snakes first the males go out from hibernation, than females,</p>

				<p>then they reproduce and the females have their young's after few months. In this case end of the August and beginning of September 2015 but unfortunately again the weather changed quickly and we weren't able to go because it was raining all the time and temperatures dropped.</p> <p>We have found very excited students that want to continue to work on this subject, 16 different experienced and young herpetologists from the region work on this monitoring. We educate them so that they can continue to work on monitoring programme.</p>
List of other herpetofauna species except <i>V.ursinii macrops</i>			X	<p>We collected and wrote all the species on every mountain that we visited and saw on the fieldtrips. It was important to record all herpetofauna species that were present because distribution data for reptiles and amphibians in Bosnia and Herzegovina are deficient.</p> <p>During the study the list of amphibian and reptile species for B&H has been made. The total number of 18 species was recorded: amphibians (<i>Bufo bufo</i>, <i>Bombina variegata</i>, <i>Bufo viridis</i>, <i>Salamandra salamandra</i>, <i>Ichytiosaura alpestris</i>) and reptiles (<i>Anguis fragilis</i>, <i>Lacerta agilis</i>, <i>Lacerta viridis</i>, <i>Podarcis melisellensis</i>, <i>Podarcis muralis</i>, <i>Dinarolacerta mosorensis</i>, <i>Dalmatolacerta oxycephala</i>, <i>Natrix natrix</i>, <i>Coronela austriaca</i>, <i>Zamenis longissimus</i>, <i>Testudo hermannii</i>, <i>Malpolon insignitus</i>, <i>Vipera berus</i>, <i>Vipera ammodytes</i>).</p>
Raise public awareness		X		<p>We made posters that we distributed to schools, universities, NGOs, mountaineering societies in Sarajevo, Mostar, Banja Luka. We haven't shared all of them...still working. Plan is to send it to all mountaineering society because we hope that they can help us with finding new sites for karst viper and all other snakes while hiking.</p> <p>We had four lectures about project. We covered different groups of people general public NGOs in Banja Luka and Sarajevo,</p>

				students (University Sarajevo) and mountaineers Mostar. We wrote five articles on web pages of our society and we prepared an article that we sent to different websites to promote the project. One interview is scheduled for beginning of the new year. Few mountaineering societies are interested in the project after they received our poster, we are making plan for some additional lectures.
Gather information that will be important to assess the species status, population trend and threats			X	We collected different information about threats, altitude, vegetation type, habitat and microhabitat types, exposition, weather conditions, time of day, air and ground temperature, reproductive status (for females), behaviour, food preferences, body size, body weight, cloaca temperature, body, head and tail measures that we will analyse and publish. It will help to define conservation status and population trend of karst viper in Bosnia and Herzegovina. All relevant information will be sent to public institutions for nature protection in the country.

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

The most unforeseen difficulty for this project was weather. This is animal that lives in specific conditions, on high mountains where often snow is and it is hard to predict when it will melt. Also it likes high humidity and warm days from May to October. This year 2015 wasn't very good for them and fieldwork activities; also we planned to go in September for one more field trip but the temperatures dropped because of the continuous raining. We tried to solve this problem by first checking the mountain areas that have lower altitudes and then higher ones and we were always watching the weather channels and websites. We rearranged the dates for fieldwork or moved them if it was possible.

I planned that a lot of people will be involved in the monitoring and I put 12 persons per fieldtrip because it would be most productive to gather large set of data. Now I know that this is very hard to achieve, people often have desire and will but the liabilities and affairs don't permit them. We try to solve this by sending them plan of monitoring fieldtrips earlier and it partially work. For further project I learned to put less people per fieldtrip and put more fieldtrips to achieve the same goal.

During the project I had an accident with my personal equipment. My camera lens fell and broke during the impact. I had to borrow the lens from my friends.

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

Three most important outcomes of my project are that:

- We started with first monitoring programme of reptile in Bosnia and Herzegovina, we gathered first data for the population of karst viper that will long-term help for conservation of this species.
- We educated young professionals for this kind of work, we trained local group of researchers to be able to continue with the monitoring and we straightened cross-border cooperation between biologists.
- We promoted environmental awareness, high mountain grassland and karst viper conservation through karst viper as umbrella species and educated local people that snakes aren't "dangerous monsters", we had good response from local mountaineers that will help us to "spread the good word".

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

We wanted to involve local community through lectures that they learn something new, that snakes aren't dangerous, that they are important part of biodiversity and that they need protection. Also we explained to them what to do if they saw a snake, if they are bitten. For the more curious ones we made an e-mail planinski.zutokrug@gmail.com on which they can send us pictures of snakes and we will answer them what species it is and they will be our helpers to find new localities of karst viper and to gather more distribution data about snakes.

During the project we managed to print sticker that we used for promotion of the project on our field trips. Also, we made poster with important information about project and species, not only of *Vipera ursinii macrops* but also two other vipers *Vipera berus* and *Vipera ammodytes*. It is visual attractive and educational because we wanted that viewer understands that not all snakes are dangerous and to learn how many poisonous snakes live in B&H. We tried to make it interested for young's and adults. Also we invite them on it to join us gather the data by taking pictures of snakes.

In the field we communicated with local people and shared the information about snakes and experience with them. All of them regardless if they liked them or not were very talkative and they will talk about occasion when they saw the snake, they will describe it so that we can tell them what species it is, if they had pictures of it on the cell phone they will show us.

Students were fascinated with the project because it is dealing with poisonous snakes and they don't have lot of opportunity to work with them in the field. Students were from Banja

Luka, Sarajevo, Mostar, Beograd and Zagreb University. They were interested in herpetofauna and our research methods. Through this project we educated experts in Bosnia and Herzegovina and now we have team that can work on snakes and on monitoring programme of karst viper.

5. Are there any plans to continue this work?

Definitely, we will continue with our work on this species in Bosnia and Herzegovina. This was good starting point to our monitoring programme but this year we had less than 10% of recaptured animals and it isn't enough to make estimate of population size (we need at least 50-60% of recaptured animals and that is at least 1-2 more years of work in ideal conditions). Also we want to work more on education of local mountaineering society's that will spread the good word about this interesting animal and hopefully they will help us to find new localities. Next project we will try to work more on promotion.

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

We already had four lectures where we were talking about our results. We plan to have few more next year with general public and biology student organisations and universities in the region. We need at least 1-2 more years of work to gather enough data to publish a scientific paper. We plan to present our work on next biology, herpetology congress or vipers conference.

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

The RSG was used in period of 19.09.2014-31.12.2015 and we had just one fieldwork season. We anticipated that the project will last a 12-18 months from May, because the season for this snakes is from May to October. We wanted to have two seasons for fieldwork because we knew that weather conditions are hard to predict and we had lot of field days in the project.

This year snow melted later than usual, in June on the high mountain grassland there were still snow patches and they delayed a project. Main activities on the project are field trips. Because they were moved everything was moved. I wanted to have good pictures for poster and presentation so we have to gather them during the fieldtrips. After we finished with fieldwork we started to work on poster and organise the lectures. We are hoping until end of September that we will have chance to go one more time on Zelengora to finish monitoring season but the temperature change didn't let us. If the RSG allows us we would like to have one more fieldtrip on Zelengora Mountain next year, when the season starts, to gather more data and we will send you additional report.

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
Monitoring travel to Zelengora/Korita (1946 km)	990	703	235	We planned to go on one more trip in September 2015 but the weather was bad, too much rain and then the temperatures dropped and there wasn't any point to go. So we have money that we didn't spend. Also I planned that there would be three cars on every field trip but sometimes there were two.
First field trip: Bjelašnica, Golija, Njegoš and Čabulja (700 km)	184	177	-3	Kilometres that we travelled with car and prices of fuel are often changing and it is hard to predict expenses
Second field trip: Maglić, Prenj (418 km)(1car)	94	98	-9	
Third field trip: Ujilica (284 km)	74	78	-8	
Lectures travel	88	88	-4,29	
Road toll	60	100,62	-43,80	We spent more money because government raised prices and new section of highroad was opened
Gloves for handling snakes	120	125,80	-12,17	We had order more gloves than expected because distributor has specified number of gloves per order
Digital thermometer, measuring scale and gauge	150	74,05	68,00	We found cheaper items then when we were righting the project
Laptop	500	475,13	-1,64	
Web page re-design and update	400	54,32	324,48	We paid the domain for the web page www.ursiniimacrops.com but we decided to merge it with the page of our society, as sub-page and it isn't finished yet so we asked for relocation of money

Posters for schools, mountaineering societies	300	608,75	- 324,65	We had permission to relocate the money from web page re-design
Daily allowance (for food, drink, etc.) on field trips	600	571,93	-3,74	
Daily allowance (for food, drink, etc.)	1440	1.101,96	261,70	We planned to go on one more trip in September 2015 but because the weather we didn't. Also I was too optimistic and planed that 12 persons will participated per fieldtrip and at the end the maximum number was eight.
TOTAL			459,12	I would spend the rest of the money for additional field work planed in June/July 2016 next year (monitoring that we didn't do in September 2015)

* The rate of conversion to Pounds Sterling used in this project is taken from Croatian National Bank on date 30.12.2015. (<http://www.hnb.hr/tecajn/htecajn.htm>): 10,328552 Croatian Kuna (kn) = 1 Pound Sterling.

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

Important next step is find funding to continue the monitoring to gather enough data and publish it so that we can use it for conservation. Also continue to work with mountaineers because we learned that there is large community of them (near 30 societies). Also we want to work more on promotional activities.

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

Yes. The RSG logo was used on posters that we made and we shared on our lectures to general public and we were sending it to mountaineering society's and we will continue until all of posters are distributed. Also on lectures that we had we put RSGF logo on the presentation and we talked about RSGF foundation and funding of the project. On the website, Facebook of my society www.hhdhyla.hr, www.ursiniimacrops.com we had articles about the project and Rufford. I have a request for an interview from website (www.discoverconservation.org) that I will give in January/February 2016 and I will talk about the project. Also I contacted few local websites if they are interested to publish the story about the project. Final report will be translated into Bosnian/Croatian/Serbian and made available on internet. Results of our work will be sent to the national nature protection offices in Banja Luka (for the Republika Srpska entity) and Sarajevo (for the Federation entity).



11. Any other comments?

I wish to thank RSGF for the amazing opportunity to work on this project and help to start the first monitoring programme and to help with protection karst viper in Bosnia and Herzegovina. This project was the first big project I had the chance to lead and experience will be very helpful for the future.

Maybe you could take under consideration that some projects on animals with specific/short time of activity it would be good that you have option to expend a project for 24 months.

Also thanks to RSG team they were very helpful and pleasant and I hope that we will collaborate on the new project in the future.

