

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	Edvárd Mizsei
Project title	Raising awareness and using local and scientific knowledge to reduce snake-human conflicts and overgrazing in alpine habitats of an endangered viper in Albania
RSG reference	15478-1
Reporting period	Final report
Amount of grant	£ 2715
Your email address	edvardmizsei@gmail.com
Date of this report	25 th February 2017

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
Booklet preparation				
Print 1000 booklet				
Distribute booklet at c. 100 villages near habitats				We reached 138 settlements.
Make 50 VetPacks (booklet, 50 ml dexamethasone, 20 syringes)				
Give VetPacks to at least 30 shepherds				We reached 43 shepherds.
Interview at least 30 shepherds				We were able to interview only 15 shepherds.
Collecting data on Greek meadow vipers				We have collected data from 54 individuals from five populations.

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

We had no real difficulties from planning the project. However, the roads are very bad in Albania, we had a lot of flat tyres. One time our Land Rover was broken open through a side window, and someone stole a few things from the car, fortunately nothing irretrievable.

One shepherd from Griba mountain called our Albanian vet (based on the booklet) to ask why we releasing snakes there. This is definitely not true, we are not releasing snakes to make new populations. There is nothing in the booklets about that. This is a widespread myth in eastern and southern Europe that ecologists (!) release venomous snakes.

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

1. We have widely distributed knowledge on nature values, importance of snakes and how to avoid snakebites. If we count with reaching 10 people

with the booklets in each settlement, we reached ~ 1380 persons, not counting the directly contacted shepherds.

2. We contacted 43 shepherds, and gave them VetPacks. We explained how to avoid snakebites with the booklets, and how to treat bitten sheep. Spatial avoidance of vipers hopefully will result in less overgrazing at the habitat patches preferred by the snakes. The effect of the project on reducing intentional killing of snakes will be measurable in the upcoming years.
3. We made good connection with local stakeholders and shepherds, which is crucial for in situ conservation activities, and will be a good basis for further work.

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

We have raised awareness distributing our booklets in 138 settlements, all near to Greek meadow viper habitats. We have involved local stakeholders and shepherds giving those VetPacks. The benefit of distributing VetPacks, is they are now able to spatio-temporally avoid snake bites on sheep, and treat snakebites with the given veterinary medicine.

5. Are there any plans to continue this work?

We would like to monitor the outcome of the project by interviewing participant shepherds in the upcoming years. We still have few VetPacks and cc. 100 booklets which will be distributed in the next years.

Further work needed to reduce the following threats:

Population size: This viper is threatened because populations are completely isolated from each other in small patches, the sub-populations are probably very small due to habitat preferences, highly susceptible to inbreeding depression and genetic drift, and thus these sub-populations are at risk over extinction vortices.

Habitat degradation due to livestock grazing: Greek meadow viper prefers less grazed areas, however grazing activity is present at all known habitats. There is a continuing decline in habitat quality because its habitats are exploited as sheep and goat pastures with variable levels of overgrazing. Grazing has a homogenizing effect on the habitat, causes a biodiversity loss and changes the structure of the microhabitat, which, in turn, reduces abundance and diversity of the orthopteran fauna. As the target species feeds exclusively on orthopterans, the condition of the grassland which is directly affected by grazing has a crucial impact on the snakes.

Habitat loss due to land alteration: There is skiing activity in two areas in Greece, where the habitat altered locally by making ski resorts. Furthermore there are two other mountains where mining (quarrying) continuously degrades habitats.

Habitat loss caused by climate change: Due to global warming alpine climate zones shifting upwards on the mountain slopes, reducing of areas of alpine and subalpine habitats. A modelling based on the available presence data combined with climate variables for the decades between 2020-2089 shows a dramatic decline, with an 82-92% expected habitat loss.

Shrinkage of population size by intentional killing: The vipers are involved in human-wildlife conflict with local communities, as on average 1-4% of sheep suffer lethal bites every year, while on the other hand shepherds intentionally kill the snakes. In 2017 we have funding for study further the effect of climate change on thermoregulatory behaviour of Greek meadow viper (Chicago Zoological Society's Chicago Board of Trade Endangered Species Fund). We also would like to deal with the other threats if funding led us to do.

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

We are sharing our findings on international conferences (e.g. Student Conference on Conservation Science). Furthermore we are continuously sharing our results and news on Facebook (<https://www.facebook.com/vipera.graeca.conservation/>), Twitter (https://twitter.com/Vipera_graeca), Instagram (<https://www.instagram.com/gmvwg/>), and our website (<http://greekmeadowviper.wixsite.com/site>).

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 grant was used from May to August of 2016, when we were able to visit the project area.

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
Booklet (£0.75×1000)	750	729	+21	Price was lower than expected.
VetPack (£18.5×50)	925	932	-7	Price was a little bit higher than expected.
Travelling (£260×4)	1040	1550	-510	We had £360 additional funding, which was not enough to cover all traveling costs, thus we had to pay the difference from our own.
TOTAL	2715	3211	-496	

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

We think the next step is to detect habitats where long time persistence is not affected by climate change, organise protection of those habitats and find appropriate land use to maintain and develop quality of habitats of the Greek meadow viper.

The conservation biology is not fully known of the Greek meadow viper, and to fill gaps in knowledge further research needed, to make bases for conservation activities (e.g. population genetics, habitat usage, and population dynamics).

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?

We used RSGF logo on the booklets, and in the following conference talks:

Mizsei, E., Ujszegi, J., Gál, Z., Szabolcs, M., Szepesváry, C., Lovas-Kiss, Á., Puskás, G. (2016): The diet of the Orthoptera specialis Greek Meadow Viper. First Hungarian Orthopeta Workshop.

Mizsei, E. (2016): Uninvited conservation of venomous snakes. Student Conference on Conservation Science, Hungary.

Mizsei, E. (2016): An endangered, cold-adapted reptile in the warming Mediterranean: Greek Meadow Vipers (*Vipera graeca*) trapped by climate. Student Conference on Science, Debrecen.

RSGF were mentioned in the following articles:

Roussos, S.A., Mizsei, E. (2016): The Forgotten Sky Island Meadow Viper. Indigo magazine 6.

Roussos, S.A., Mizsei, E. (2016): Regional news: Greek Meadow Viper. *Vipera: The IUCN Viper Specialist Group Bulletin* 1.

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

12. Any other comments?

We are grateful to RSGF to support the conservation of the endangered Greek meadow viper.