

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	Levon Aghasyan
Project title	Development of conservation measures for threatened reptiles in Khosrov Forest State Reserve, Armenia.
RSG reference	15474-1
Reporting period	June 2014- June 2015
Amount of grant	5820
Your email address	agaslev@yahoo.com
Date of this report	11 July 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
<p>Evaluate the current conservation status of the four key reptiles their abundance, vulnerability, threats and estimate the size of range patches.</p>			<p>✓</p>	<p>All sites of reptiles captures were measured by GARMIN-60Cx and Magellan Medirian Platinum GPS devices and plotted onto the handy maps. We also recorded slope exposure, habitat characteristics, weather, and air temperature by (EXTECH IR201) InfraRed laser Thermometer -50 to 518oF, -50 to 270 oC and (TAYLOR) Indoor/Outdoor thermometer with Indoor humidity.</p> <p>1. Spur-thighed tortoise (<i>Testudo graeca</i>). The guesstimate of tortoise abundance in Armenia is 900-1000 individuals. Local densities are 1-5 individuals/10 ha. Encroachment of main habitats (especially in Southern Armenia) and illegal uncontrolled harvesting are the major threats for this species. The landscape characterised by typical rocky semi desert. The soil is of the gray mosaic semi-desert type. The volcanic hilly land among flat terrain is presented by the pumice fields scattered by individual small thorny shrubs. The soft, friable soil is very suitable for rich semi desert vegetation. The horizontal range of area is 1000-1500m above sea level. The climate is continental and arid.</p> <p>2. Transcaucasian racerunner (<i>Eremias pleskei</i>). These species inhabits firm sands covered with calligonum, milk vetch, wormwoods and sometimes cereals. Infrequently recorded in rocky wormwood and salt-marsh semi-deserts. Short burrows (10-15 cm) dug underneath the scrubs serve as shelters. Can reach at 1500–1700 m above sea level This species is generally associated with sandy semi-desert enclaves. The abundance in Khosrov reserve in July, 2014 was 10 lizards on 3 hectares. In the same place the census in May of 2015 has shown high density on very restricted territories visible lizard on surface - near 25-30 individuals on hectare. The visible lizards on surface in middle of June became less – 21 lizards on hectare. So, our studies of 2014-2015 have shown that the population size of this species is comparably high in the study area.</p> <p>3. Armenian steppe viper (<i>Pelias eriwanensis</i>) and Armenian viper (<i>Montivipera raddei</i>) In the mountain, xerophytes forests steppes and in mountain juniper as well as in deforested areas with rocky slopes /1500-2000m/ encountered the Montivipera raddri and in higher zone's Pelias eriwanensis. They meet in the Kakavaberd station zone</p>

			<p>around the mountain slopes. The biotopes of Armenian viper (<i>Montivipera raddei</i>) is situated in 1500-1800m.a.s.l., and the biotopes of Armenian steppe viper (<i>Pelias eriwanensis</i>) is situated in 1800-2500 m.a.s.l. on the rocky slopes of the mountain subalpine zone.</p> <p>The both species of viper were also found in low-lying areas along the mountainous deforested areas covered with sparse vegetation and tree-bush stony slopes. Sometimes they could go into the cultivated areas where they find refuges in the fields. The decisive factors for surviving of reptiles are the existence of permanent and temporary shelters and also the availability of food.</p> <p>The population size of Armenian steppe viper (<i>Pelias eriwanensis</i>) is not big, but in foothill habitats or between stones they can concentrate at the density as high as 6-8 individuals/ha. Generally, the population is stable due to its distribution on higher elevations.</p> <p>The negative factors affecting reptiles are destruction of natural habitats in the support zone of the Reserve: harvesting, livestock grazing, unregulated tourism etc.</p>
Creation and description of GIS maps of species distribution and related environmental variables and selection of territories for fencing in the future.		✓	<p>During our expedition and searching of these species in different season we identified the 4 most important reptile habitats with the highest density /in Garni station and in Kakavabert station/ the size of that area is about 5 ha. The mentioned important habitats were identified for future application of special signs and information boards about forbidden activities in those territories in future. (collection reptiles killing and etc)</p>
Capacity building. Involvement of students and local peoples in conservation activities		✓	<p>The project was contributed to the development of research potential in Armenia as well as regulated ecotourism in Armenia. This was achieved by involvement of young scientists, local community members and involvement of the local staff in special training courses and field work which were organised during implementation of the project.</p>
Raising public awareness and implementation of environmental education program		✓	<p>In the framework of this project the calendars and booklets on <i>Testudo graeca</i>, <i>Eremias pleskei</i>, <i>Pelias eriwanensis</i> and <i>Montivipera raddei</i> were prepared and published for ecological up-bringing and awareness raising of local people and wide public. Three meetings and seminars in local communities with local people and heads of the communities were organized in the administrative building of Khosrov Forest State Reserve.</p> <p>Explanatory and ecological-elucidatory activities were implemented with locals.</p> <p>During the meetings and seminars the calendars and booklets were distributed. One seminar was organized in the school of Garni village where we presented the lecture about biodiversity of Khosrov State Reserve and about rare species of reptiles in order to increase local knowledge and achieve positive attitude concerning environment and wildlife.</p> <p>Also one presentation was done in the Laboratory of Vertebrates of the Scientific Center of Zoology and Hydro-Ecology of the NAS of RA, about the purpose</p>

				and activities which was planned in our project.
Development of recommendations their submission to Ministry of Nature Protection of Armenia.			✓	The results of our study and about all known territories/biotopes which were selected, studied were provided to Ministry of Nature Protection of the Republic of Armenia for future conservation activities focused on the mentioned territories.

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

No any difficulties across during the project implementation.

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

1. Overall, on the base of our study results the current population size of the mentioned reptiles in the Khosrov State Reserve we could evaluate as stabile. During our expedition and searching of these species in different season we identify the 4 most important reptile habitats with the highest density /in Garni station and in Kakavaberd station/ the size of that area is about 5 ha.
2. The environmental education programme among locals are elevated and the negative attitude towards reptiles are positively changed.
3. Capacity building programme was initiated. The staff of Khosrov Forest State Reserve is trained in collective researches which are important start point for organisation research group to study biodiversity in hotspots as well as implementation of ecotourism more effectively.

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

Snakes are usually not to be appreciated by humans and are still perceived by people with caution. We have found ways to combine snakes as an indispensable part of biodiversity with development of local livelihood. The talks about importance of reptiles and neighbour lizards population are essential among local community. All project activities were done with active participation of local authorities by combing viper conservation and organization of ecotourism. They gained new skills and knowledge about reptiles biology and ecology which will help them within the organization of safe ecotourism.

5. Are there any plans to continue this work?

It is essential to isolate the habitats of Reptiles from tourist routs as well as application of special signs and information boards about forbidden activities in that territories. Additional more extensive field studies are required to map current distribution of these apparently rare reptiles and monitor the known populations. Large-scale presence-absence surveys should be undertaken. It is important to continue systematic and ecological field research activities which we began in this project. We are planning to continue the field researches in Khosrov State Reserve, monitor the status and changes in local habitats, educational program among

locals and preparing the draft Action Plan which will be submitted to Ministry of Natural Protection. Particular attention should be paid to continuous and long-term implementation of awareness-raising, ecological upbringing of local people, especially schoolchildren as the next generation.

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

The results of our study and about all known territories/biotopes which were selected, studied were provided to Ministry of Nature Protection of the Republic for future conservation activities focused on the mentioned territories. The publication materials published within the project are widely disseminated as well as provided to the Visitor center of Khosrov State Reserve for future dissemination among tourists and locals.

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 Rufford Foundation grant has been used during the period of June 2014 and June 2015.

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
Staff costs (daily allowance, incl. food): £10/person/day x 5 persons x 2days/trip x13 trips	1300	1300		
Fuel for return trips from Yerevan to Khosrov: £1/L x 15 L/100km x 200 km/trip x 13 390	390	390		
Organization of meetings with staff members of Khosrov State Reserve and local people: breaks, stationary, accessories - three meetings each	300	480	180	The price for accessories has increased. Also one presentation was done in Laboratory of Vertebrates Zoology of the Scientific Center of Zoology and Hydro-Ecology of the NAS of RA.
Indoors classes for schoolchildrens: breaks, stationary, accessories.	200	200		
Print of 500 wall/calendars Print of 500 booklets Print of 500 guideline	1300	1300		
Car rent for trips from Yerevan to Khosrov Reserve: £30/day x 2 days/trip x 13 trips	780	780		
GIS mapping of study area: mapping service	600	540	60	Mapping service was in a little less price.

Printer/copier/scanner (combo)	400	280	120	We bought the printer of Canon in lesser price.
One Binocular Nikon for Khosrov Reserve staff	100	100		
One Binocular Nikon for team	100	100		
Epson VS230 SVGA3LCD Projector	350	350		
Total	5820	5820		

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

Conservation actions need to protect this species and encompass different levels of conservation measures.

As the habitat loss and destruction are the main cause of the population decline in most of reptiles, habitat management is widely recognized as a stem in conservation action plans.

1. It is essential to grant protection to tortoise habitats located beyond the protected areas, strengthen control over illegal harvesting and to apply captive breeding for recovery of depleted wild populations.
2. It is essential to fence off the the most important reptile habitats of Khosrov State Reserve from trespassing and ecotourism routs and to implement activities targeted at recovery of depleted wild populations.
3. Application of special signs and information boards about forbidden activities in that territories. (collection reptiles killing and etc)
4. It is essential to include of surrounding areas of Kakavabert station to the reserve zone of the Khosrov State reserve.

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?

The logo of RSGF was used in publication materials (booklets and calendars) within the project which were wildly distributed among wide ridge of public, included scientific institutions, Ministry of Nature Protection of Armenia and est.

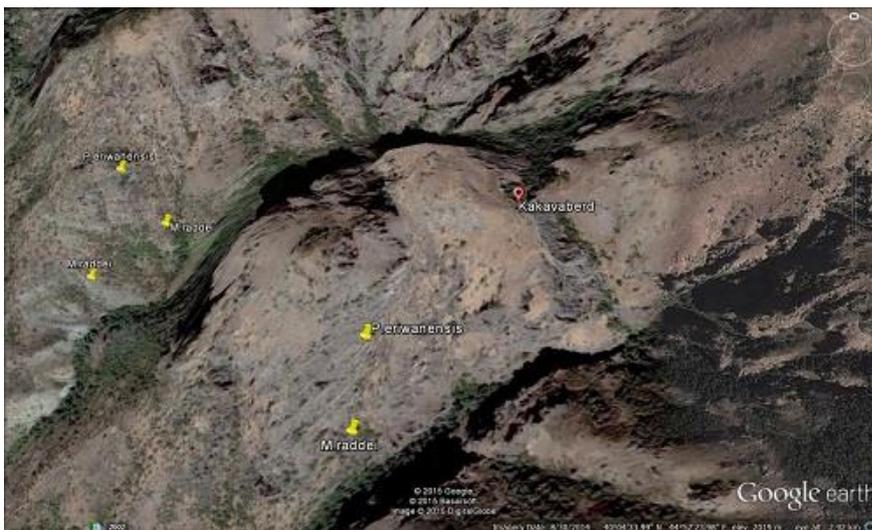
11. Any other comments?

Armenia is located in the Caucasus Biodiversity Hotspot and the vulnerable Caucasus Ecoregion, located on the crossroads of Europe and Asia. So, it is recognized to hold notably rich diversity of species and habitats. Extraordinary faunistic diversity of the Caucasus can be well illustrated on an example of Armenia which, despite its small area (29743 km²), accommodates 59 out of 110 species of Amphibians and reptiles recorded in the Caucasus. So, it is very important for conservation of amphibians and reptiles of Armenia. As well as development of conservation strategy of any species brings strong benefits to the entire Caucasus Ecoregion.

So, the team members and I appreciate and deeply grateful to the Rufford Foundation for such opportunities and possibilities to make his contribution to the biodiversity conservation of Armenia.



Garni Station



Kakvaberd station



Map of study area with locality points of reptiles



