

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

Your Details	
Full Name	Elnaz Najafi Majd
Project Title	Ecology and Conservation of Threatened species, Lake Urmia Newt, <i>Neurergus crocatus</i> Cope, 1862 in Iran
Application ID	20376-1
Grant Amount	£ 5000
Email address	elnaz.najafi.majd@gmail.com
Date of this report	October 2018

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
Determine the current distribution range of <i>N.crocatus</i>				We have completed field surveys across the potential range of <i>N.crocatus</i> on the mountains located at the west of Lake Urmia near the Turkey and Iraq borders in West Azerbaijan province, Iran. The geographical position of the localities was recorded by GPS that will be used for modelling the geographic distribution and suitable habitat range of the species. Results of the study will be published soon.
Investigate the presence of populations in the area to collect data of their morphology and life cycle				Population monitoring was designed with the assumption that the target population is closed. Visually encounter surveys around breeding sites was conducted by walking through the area or habitat for a prescribed time period. During the field surveys, all captured newts were photographed dorsally to record their colour pattern as an individual recognition mark. Total body length and Snout-Vent Length (SVL) of each newt was recorded, as well.
Estimate population density/size				Population size was estimated by capture-mark-recapture method consisting of the capture and marking of individuals by taking digital image, release, and their subsequent recapture or re-sighting one or more times. Population density is a measurement of population per unit area or unit volume.
Investigate the specific ecological niche requirements of				Habitat and microhabitat variables were collected as ecological data from all visited habitats. Water

<p><i>N.crocatu</i>s and habitat preferences.</p>			<p>samples were collected from the point where each newt was found and analysed for its physico-chemical characteristics. Temperature, dissolved oxygen, pH, salinity and conductivity were measured by Hach Portable “pH/ conductivity/ dissolved oxygen meter” in the field and some chemical characteristics such as iron, manganese, potassium, chloride, sulphate, phosphate, nitrate, ammonia and hardness (magnesium and calcium) were measured in the laboratory using a Hach Lange “DR 2800 VIS Spectrophotometer”, following the manufacturer's procedures.</p>
<p>Determine possible threats to formulate appropriate management and conservation strategies for <i>N.crocatu</i>s.</p>			<p>The most notable threat to this species is habitat loss due to the divergence of the stream for irrigation of cultivated lands, drainage and water conduit for local people communities, pollution, road construction works, drought and flood. When all these threats combined might lead to the decline and extinction of these species populations throughout its distribution range. Killing newts by the thought that they are poisonous and plucking vegetation inside the spring where animals lay eggs on them in the water sources used by locals can be considered as an observed threat.</p>
<p>Raising awareness of local communities.</p>			<p>Several sessions have been held in public places in the villages or in the picnic area to introduce the harmless species to the people and describing the importance of conservation of the bio-indicator species that just live in the area. We had face to face educational sessions and talked with locals using springs for tapping and drinking or gathering medicinal plants and herbs at proper seasons.</p>

			<p>Educational brochures and information cards about species were published and distributed among villagers, students and travellers visiting the area. We asked the local shop owners to hang on the info cards and brochures on their store's wall or glass windows as well.</p> <p>We had presentations in primary and secondary schools in three villages. The presentations focused on raising children's knowledge about the amphibians/newts and the importance of its conservation. Also 300 cloth backpacks with the newt pattern and slogan for conservation were prepared and distributed among students and teachers.</p> <p>Unfortunately, the Department of Environment of West Azerbaijan Province and the city of Oshnaviyeh did not participate in any part of these programmes. Even though we have notified and invited them prior conducting our activities.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

The first difficulty was due to the occurrence of the flood in the region that caused the destruction of the roads and habitats in the project area. The roads were washed and ruined. In many places it was impossible and very difficult to access the area. Springs and the river bed were filled with sand. The newts were probably washed and killed during this flood. Therefore, we had to wait for repairing the survey site which has led to the extension of the field surveys time.

Coordinating with governmental organisations is one of the usual problems and difficulties in most developing countries such as in Iran. In May 2017, I wrote a request to the Department of Environment West-Azerbaijan province, to coordinate with the Education Department for the school educational part of the project. At first, they were receptive and welcomed the idea. They were even willing to accompany us during our project. In return, the organisation requested that their logo must be on all training materials.

At the beginning of schools in September 2017, as I followed up with the Department of Environment to obtain permission for conducting educational sessions in schools, I was informed that the request document has been lost! Therefore, I had to write a new letter and the paperwork took a long time to be delivered and processed by the Department of Environment of Oshnaviyeh to the Education Department of Oshnaviyeh! Unfortunately, the follow up did not work even though I personally went to the Education Department of the city (Oshnaviyeh) and found out that the request was not approved! Thus, in October of 2017, I applied again directly through the Education Department of the province and finally succeeded to get permission to conduct the educational programs at schools in three different villages. Although we succeeded in completing the project without the support of the Department of Environment, their organisational logo was on the educational materials.

School administrators and teachers were very supportive and helped during the educational sessions and making the necessary coordination as needed.

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

I believe that we have nearly achieved all the objectives planned for this step of the project.

The most important outcomes were determining distribution range and population status of *Neurergus crocatus* that are key factors to assess the status of the species and manage conservation strategies.

The other important outcome was determining some ecological properties and habitat preferences of *N.crocatus*.

Educating 300 students from primary and secondary schools is another important achievement of the project. As anthropogenic factors are the main parts of threats to survival of the species, raising awareness among locals in three villages will have a great impact on the whole society of indigenous people living adjacent to it.

The educational materials will have a long-lasting influence on the local community. We believe by continuing such activities the level of threat to newts will be minimised. In order to diminish the use of paper materials, we used cloth bags during the educational sessions instead of info-graphs and posters. For this purpose 300 backpacks were prepared and distributed among students at schools. Thus, by distributing the bags at schools and educating bodies, I believe we transferred the knowledge through students to their families.

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

The local particularly shepherds actively participated as a guide in the field trips and monitoring (investigation/data gathering) part of the project. The teachers, school authorities and students participated in the school training part which raised their awareness about the issue. The Azerbaijan newt conservational education

programme covered three schools and educated 300 students. We made a presentation about nature, environment, and the importance of amphibians and why the biodiversity and species conservation are imperative. At the end of the presentation, the cloth backpacks demonstrating figure *N. crocatus* and the RF logo were distributed among students.

One of the most beneficial outcomes of our project for locals was increased awareness and knowledge regarding the importance of conservation of Azerbaijan newt, *N.crocatus* and its habitats in local communities.

5. Are there any plans to continue this work?

As regular and continuous public awareness programs and environmental education in the area and having school trips for students in the proper season to visit closely the habitats and species will be more useful for students to understand the conservation subjects and facilitate the conservation process, we hope to could resume the programme.

We are ambitious to continue the scientific studies on the populations of *Neurergus crocatus* and public awareness/educational activities of the species conservation also in Turkey and Iraq, in the areas that species distributed.

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

We presented some the results in "The Rufford Foundation's Mediterranean Conference in Turkey on May 15 -16, 2017 – Köyceğiz, TURKEY" and "ISEEP-2017 VIII. International Symposium on Ecology and Environmental Problems. Çanakkale Onsekiz Mart University. Çanakkale, Turkey. October 4-7, 2017".

Additionally, we plan to publish the results of the study in the Froglog (the world's first amphibian conservation digital magazine that is published by IUCN SSC amphibian Specialist Group) and peer-reviewed scientific journals soon. Also all the results will be published as a part of Elnaz NAJAFI-MAJD's Ph.D. thesis.

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 project fund was spent during the time period of March 2017 to March 2018. The budget was spent according to the project plan and small changes were made finalizing the project in the most perfect way possible.

The anticipated length for the whole project was 12 months, but the actual length was some months more because of the natural disaster in the area I explained above which delayed our field surveys. Additionally, our work was delayed due to the issue I mentioned in getting contact with the local authorities of Department of Environment and Education Department for educational programmes.

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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion. 1 £ sterling = 47000 Rials

Item	Budgeted Amount	Actual Amount	Difference	Comments
Vehicle (car rental)		635	- 635	We had to rent car because in some areas our car was not suitable.
Fuel	648	648		
Food and beverages	1584	1145	+ 439	Less money was spent for food because locals kindly provided food for our team in some days.
Accommodation	1188	670	+ 518	Less money was spent for living expenses because in some case locals kindly provided accommodation for our team.
Water Analysis Testing Kit	983	983		
Poster	192		+192	
Infographic	128		+128	
Cloth Backpack		642	- 642	We used cloth backpacks instead of paper educational materials. We covered this difference by transferring money from other items.
Info card	128	128		
Brochure	149	149		
Total	5000	5000		

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

Though ecological research does not always show an immediate benefit, it may lead to important and even lifesaving applications. By giving us a better understanding of our environment, ecological data can help solve the social and environmental problems threatening the biodiversity today.

Ecological studies and conservation programs are the long-term and continuous processes. Also there are still many aspects of *Neuregus crocatus* ecology that require more research.

The important next steps are:

- Continuing and expanding the conservational education programme in schools.
- To replicate public awareness activities also in Iraq and Turkey.
- Collaborate with local NGOs whom can work closely and frequently with local communities.
- Involving local communities even more in our programmes.

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

- We used the RSG logo on the backpacks and labels that were distributed for education programs in the village's primary and secondary schools.
- We used the RSG logo on brochure and info cards that were distributed among students, local people, shop owners and including the visitors in the area as well.
- Logo also was used on the banner of education programme.



Cloth backpacks and slogan labels with the RSG logo





Education program in the school of Bimzorte village



Education program in the school of Mirabad village

11. Any other comments?

I am truly grateful to the Rufford Foundation for giving me the opportunity to conduct this project. The current work is part of a larger project which, is my PhD thesis and includes the study of ecology and improve conservation of the threatened species, Lake Urmia newt, *Neurergus crocatus* Cope, 1862 in Iran, Iraq and Turkey. The Turkish side of this study was supported by Ege University Science and Technology Centre- Technology Transfer Office (EBILTEMTTO), and the Iraq side was assisted by few Iraqi Kurdistan authorities.

The Rufford Foundation played an important role making this success by putting considerable efforts into the survival and conservation of Lake Urmia newt. This project would have been difficult and we would have not achieved the same results without the support of the Rufford Foundation. The support has allowed for positive and tangible changes for conservation of the species in this area.

Hope to continue other projects with the Rufford Foundation in the near future.

I would like to express our sincere appreciation to the referees (Prof. Dr. Uğur KAYA, Dr. Shahrokh PASHAEI RAD, and Dr. Elif YILDIRIM) for their valuable support during the project.