

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	Tigran Ghrejyan
Project title	Identification of conservation status of ground-beetles of <i>Procerus</i> species-complex (Carabidae, <i>Carabus</i>) in Armenia and elaboration of protection measures
RSG reference	24964-1
Reporting period	April 2018 – April 2019
Amount of grant	£4999
Your email address	tkredjyan@gmail.com
Date of this report	13.04.2019

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
Identification of taxonomic composition of <i>Procerus</i> in Armenia, delimitation of taxa				Basing on collection materials and newly found specimens, the taxonomic composition of the target taxon (subgenus <i>Procerus</i> of the genus <i>Carabus</i>) in Armenia was elucidated; key for identification of Armenian <i>Procerus</i> was prepared for further dissemination among stakeholders
Elucidation of <i>Procerus</i> taxa distribution, habitat conditions and threats				Data on current distribution, some ecological and biological peculiarities of Armenian <i>Procerus</i> taxa, their habitat conditions, current and potential threats were revealed for several populations in southern and northern Armenia; on the other hand, some previously reported populations were not found and, thus, further investigations in those regions are necessary
Creation of GIS-based database				Database was created and filled with all the data available; further completion of database is supposed
Preparation and submission of proposals for inclusion of target taxa into National Red Book and into IUCN Red List				Preliminary assessment of status of Armenian <i>Procerus</i> taxa using IUCN Red List' Criteria was carried out; respective fact sheets are largely prepared and almost ready for submission
Elaboration of Action Plans for all the taxa distinguished. Delimitation and planning of PAs necessary for taxa and their habitats conservation, creation of respective documents and their submission to the Governmental				Habitats of <i>Procerus</i> taxa were mapped, major threats and possible mitigation measures were assessed. On this basis Action Plans for each taxon were prepared. Documents on creation of new PAs of different status (e.g., micro-reservation or Nature Monument) dedicated to the <i>Procerus</i> protection were prepared taking into consideration current Armenian legislation

bodies			
Rise of awareness of stakeholders including conservationists' community, authorities of different levels, local communities, etc. Increasing of capacities of local educational facilities (schools, colleges) and rise of the level of understanding of the importance of target taxa conservation			Respective activities were carried out in all the regions surveyed, including meetings, lectures, etc. Local educational facilities as well as other stakeholders (PA headquarters, local governance bodies, etc.) were provided with didactic materials (posters, booklets, calendars), which according to our information are still in use in the institutions above mentioned. It must be underlined that due to public awareness rising we are permanently getting information on observations of <i>Procerus</i> in the territories visited in the framework of the project implementation
Training of young scientists and conservationists for improvement of their skills in researches and implementation of conservation measures and public awareness activity			All young members of our implementing group participated in project implementation activities satisfactory getting respective skills
Publication of scientific papers for elucidation of the questions of <i>Procerus</i> ' taxonomy and problems of their conservation			The publication on taxonomy of Armenian <i>Procerus</i> using multilateral approaches (morphological, karyological, molecular) is under preparation; preprint on the problems of <i>Procerus</i> conservation in Armenia is under preparation for submission to Research Gate is prepared as well

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

First of all it must be stressed that during planning of our activities it was underestimated the level of rarity of the target taxa. Thus, during our expeditions it turned out that satisfactory data on abundance and even presence of some *Procerus* populations were not available. Sometimes in such cases we got information from local peoples but these did not allow getting enough comprehensive data for real assessment of the status of concrete populations.

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

1. The taxonomic composition of *Procerus* taxa in Armenia was elucidated; five taxa were revealed (*P. caucasicus fallettianus*, *P. c. antonkozlovi*, *P. c. tatyanaorokhova*, *P. c. nakagomei*, *P. c. mishkai*) and *P. caucasicus colchicus* was excluded from Armenian fauna;
2. The modern data on distribution and some peculiarities of biology of Armenian *Procerus* taxa were obtained and included into database; taking into consideration the data above mentioned the proposals for inclusion of target taxa into Armenian Red Book and IUCN Red List were elaborated and ready for submission;
3. The recommendation for conservation of the target *Procerus* taxa were elaborated.

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

Local communities' members were involved in project implementation providing us with the data on some *Procerus* taxa occurring on the respective territories; besides authorities of communities and PAs supported our activity organising meetings with their staff and pupils of local schools targeted to awareness rising of the members of communities, especially among young generation. According to our information, illustrative and didactic materials shared during project' implementation are still in use with educational purposes.

5. Are there any plans to continue this work?

During field work implementation not all the populations of target *Procerus* taxa preliminarily known from some habitats of the study area were found and data on them are necessary for making our database and elaboration of further conservation measures more comprehensive. Thus, we are intending to continue the field research activities for getting the missing data.

We are planning to continue public awareness raising activities, including dissemination of respective educational materials in local communities and carrying out lectures and conversations with local people (including educational institutions) to get new information and monitoring of the populations of *Procerus*.

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

1. Proposals for inclusion of Armenian *Procerus* taxa into further edition of country's Red Book with datasheets will be submitted to the Ministry of Nature Protection of RA which is responsible for Red Book management;
2. Action Plans including proposals of creation of new PAs of different status will be submitted to the Ministry of Nature Protection of RA as well;
3. Documents on taxa proposed for inclusion into IUCN Red List of Threatened Species will be submitted to IUCN SSC;

4. The project results will be prepared and published in peer-reviewed journals, as well as shared in different conferences and workshops.

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 was used during period from end of April, 2018 till April, 2019, and the activities were carried out according to the Project timescale.

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
Publication of booklets and posters/calendars	800	700	-100	Due to fluctuation of the currency rate actual cost for publication of didactic materials became lower
Purchase of tent (for 2 person)	90	90		
Purchase of notebook with accessories	300	300		
Purchase Trinocular microscope with photo camera	610	550	-60	The tools mentioned were purchased directly from Russia which is somewhat cheaper than in Armenia
Purchase of Garmin eTrex GPS	120	120		
Per diems: £7/person/day x 4 persons x 5 days/trip x 10 trips	1400	1505	+105	Additional trip for dissemination of information and didactic materials was carried out (£7/person/day x 3 persons x 5 days/trip)
Car rent and driver: £20/day x 5 days/trip x 10 trips	1000	1100	+100	Additional sum was spent during trip above mentioned
Fuel (£0.7/L x 15 L/100 km x 700 km/trip x 10 trips)	679	720	+41	Additional fuel was spent for the trip above mentioned
Total	4999	5085	+86	

During Project implementation the rate of £ sterling / Armenian dram (AMD) fluctuated from 665.50 to 634.12 AMD/£.

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

In my opinion one of the most important further activity is enlarging of geographical scope of surveys taking into consideration the territories from which there is old collection materials on *Procerus* and those potentially inhabited by different *Procerus* taxa (e.g., characterised by high abundance of their prey snails *Helix* spp.) from which these beetles are not reported yet. This will allow us to get comprehensive data on distribution and abundance of the target taxa through the whole country's territory.

Another important step is carrying out activities dedicated to consultations and discussions on the action plans proposed (including approaches on creation of new PAs) among stakeholders – governmental bodies, local authorities, existing PAs authorities, NGOs, etc. for coordination of the process of implementation of the conservation measures proposed by our group.

Of crucial importance can be considered continuation of public awareness rising activities; it will allow, among other outcomes, getting new information on presence, abundance, threats of concrete populations of *Procerus* in our country.

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

We used the RF logo in all the materials published (posters, booklets, calendars). In all of our lectures, meetings and discussions the RF role was stressed. And it is supposed to stress our acknowledgment to the Rufford Foundation in further publications.

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

Dr. Mark Kalashyan is a leading coleopterologist in our country and worldwide known specialist on the beetles taxonomy, ecology and conservation. His role in the framework of the project was taxonomic analysis issues, help in assessment of the target taxa using IUCN Criteria and elaboration of conservation measures. **MSc Noushig Zarikian** (post-graduate student), **Ms. Meri Mazmanyán** and **Ms. Serine Fahradyan** (Master students from Yerevan State University) and **Ms. Elya Khachatryan** (Master student from Armenian State Pedagogical University) were involved in some expeditions, laboratory research and into public awareness activities as well.

Dr. Gayane Karagyan from our Scientific Center assisted during the project implementation as a person very much experienced in insects' field observations and multilateral laboratory works. She worked as an experienced lecturer promoting public awareness rising in local communities, including young generation. She participated in creation and completion of database, GIS-analyses and mapping.

Dr. George Fayvush (from Institute of Botany, NAS RA) participated in several of our expeditions as an experienced geobotanist for estimation of habitats of *Procerus* beetles.

Associated members of our working group, namely world famous specialists on the Carabidae taxonomy and ecology **Dr. Pierfranco Cavazzuti** (Italy), **Dr. Thierry Deuve** (France), **Professor Kirill Makarov** and **Mr. Anton Kozlov** (both from Russia) assisted our work participating in particular in discussions on taxonomy and ecology of *Procerus*.

12. Any other comments?

I would like on behalf of whole implementing group to express our deepest gratitude to The Rufford Foundation for support of this project which allowed getting new information on one of the most attractive groups of endangered insect species of our country and elaborating measures of their conservation.