

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	Alireza Naqinezhad
Project title	Distribution pattern of rare and threatened endemic plants in forest/steppe ecotones of Central Alborz Mts, N. Iran, toward a conservation implication
RSG reference	16952-1
Reporting period	March 2015 to March 2016
Amount of grant	£ 4980
Your email address	anaqinezhad@gmail.com , a.naqinezhad@umz.ac.ir
Date of this report	15.04.2016

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
Inventory of endemics and rare plant species			X	I collected all endemic and rare plants in the Golestanak Protected Area and its entire surrounding accompanying species. Totally, 450 plant species were carefully collected and determined of which 82 are endemics. The endemic plants belong to different genera and families. This number of endemic plants was not expected to be collected in relatively small surface of the study area. Out of all studied endemic plants, 57 species have already been considered within "Red Data Book of Iran". We provided data for all these species. Most importantly population information of 14 species which was designated as "Data Deficient" (DD) was surveyed.
Altitudinal range with highest number of endemics and rare plants.			X	Based on our investigation in the pilot study site "Golestanak area" we found that ecotone elevational belt (i.e. 2400 to 2800 m) has the highest number of endemics and can be considered as the most priority sites for local conservation.
Accompanying plant communities holding rare and threatened plants of forest/steppe ecotones are documented using phytosociological plots and classified numerically emphasising on diagnostic characters of rare and endemic plants.		X		At the time of report of this project, phytosociological communities have not been fully recognised but the vegetation of area was physiognomically divided into three different belts including <i>Quercus macanthera-Berberis orthobotrys</i> community in the lower belts (ecotone area) and <i>Onobrychis cornuta</i> communities in the middle belts and <i>Grammosciadium platycarpum-Plantago atrata</i> community in the upper belts. The analysis on vegetation of area and all surrounding mountains is under the process which will be published as separate paper. Each upper vegetation belt is characterised by specific rare and endemic plants.
Current research will provide more up-dated information of habitats of rare and endangered endemic plants for the Red Data Book of Iran.		X		In this study, habitat and accompanying species of each endemic and rare spices were estimated using phytosociological plots. In each plot one soil sample was also collected for evaluation of habitat preferences.

<p>The results will be published as educational booklets/monograph and seminars for local conservation guard staff, scientific experts and all school pupils and students visiting the area. We planned to have two/three seminars in University of Mazandaran (for staffs and students), a public fair on importance of biodiversity and conservation of rare and endemic plants and their ethnobotanical features</p>		X		<p>We prepared two educational posters about endemic plants. The results, especially the importance of endemism and plant diversity and habitat features of the plants, have been presented as seminars for students of high school in Babolsar and biology students of the University of Mazandaran. I am preparing a comprehensive informational booklet for visiting scientists working in Goletsnaka Protected Area. I plan to finish it in 6 months. However, a poster with high quality colourful photos has been prepared for the guard station in the Golestanak Protected Area. For the preparation of the posters, we received many helps from experienced conservation guards of the area.</p>
<p>Seeds and bulbs of some important rare and endangered plants will be utilized for a section called “Alborz ecosystems” within National Botanical Garden, Iran for cultivation and public exhibition</p>			X	<p>Seeds of five endemic species were gathered and preserved for cultivation in National Botanical Garden, Tehran.</p>
<p>Beside to providing more updated data for IUCN categories of Red Data Book of Iran, a full geo-botanical and floristic survey of the area, provides a scientific background to considering the pilot area as a “National Park” within the context of Iranian Department of Environment.</p>		X		<p>Despite to rich plant diversity and endemism in Alborz Mts, one of two largest mountain ranges in Iran, there is no “National Park” in the area. These habitats are only remnant refugee for remarkable numbers of wild brown bears, deer, gazelles, wild goats and Iranian leopards and therefore deserve to be designated as “National Park”. We can suggest this new rank of protection in all our publications.</p>

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

We expected to work also on our second pilot study sites, “Sheshrudbar Protected Area” in 2015. However, because of two reasons we couldn’t finish the work in the timetable predicted by the current project. Firstly this was because of the very short period of study particularly in the higher mountains where the optimum of growing of vegetation is between June and August. Another reason was higher destruction pressure in Sheshrudbar Protected Area than what we expected in the initial phases of the project. On the overall aspect, Golestanak Protected Area is protected with

higher priorities by the Department of Environment, Mazandaran Branch. In our investigation we included more surrounding areas within our survey. It was from Varvasht summit (about 4000 m) to Namazgah and other summits around the Golestanak Protected Area. For this reason, we spent majority of our time on only one pilot study site.

Basically, the determination plant communities and determining endemic plants takes time. Some plants should sent to the specialists for further confirmation and we couldn't reach to some specialists because of unforeseen reasons.

One more difficulties was transferring money in Iranian bank which cause a few months delay for receiving the grant.

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

- The inventory of the present localities of the rare and endemic plants species in Central Alborz Mts (Golestanak Protected Area) communities and their ecological and phytosociological characteristics. IUCN categories of endemic plants of Red Data Book of Iran were revised.
- Altitudinal distribution of the plants were carefully assessed and habitat of rare plants were carefully described.
- The preparation of informational posters for students and local protection guards for protection these endemic and rare plants and their habitats

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

As I mentioned before, the pilot study area is very far from villages and local settlements. It is located mainly in upper than 3000 m. Only a few local settlements are located in the lower mountains of the study area. Moreover, some temporary farmers are living in the forest parts of the study area. We tried to collect some ethnobotanical information from these local communities. Unfortunately, despite to general interest to the wild animals, there was no botanical knowledge among local conservation guards and local communities. We explained our project and its importance for wildlife particularly to the protection guards who were actually belonged to local communities of villages surrounding the area. I organized a seminar for protection guards for explaining about botanical nomenclature, ecology of endemic plants and phytosociology.

The informational poster "plant diversity and endemism of Golestanak Protected Area" was published and dispersed in the research laboratory of the University of Mazandaran and Department of Environment, Sari.

5. Are there any plans to continue this work?

We plan to continue the work on checking out the present state of all rare plant species localities in Central Alborz and other regions of Iranian mountains using more and intensive information of population size and dynamic of endemic plants. The further investigations of dynamics of the number and structure of populations' of these species at protected areas also planning.

I am very eager to publish at least two ISI papers (one from plant diversity and another one for phytosociology) of our results. We also plan to have a very comprehensive booklet guide (including the photos of all endemic and rare plants) for scientific and local visitors of the Golestanak Protected Area and all its surrounding mountains.

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

I plan to present the result of the current investigation in 59th Annual symposium of vegetation Science in Brazil June 2016. As mentioned, informational poster was published and distribute among concerned persons, scientific community, NGOs and other organisations.

The materials obtained during the project can be use in the new edition of the Red Data Book of Iran and also in Flora of Iran. New information about 57 rare and threatened species were provided of which 14 species belonged to Data Deficient category in the old version of “Red Data Book of Iran”.

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

We received money a few months with delay. During April and May, all materials and equipment were purchased. The field research was carried out during June to September 2015. We used the main parts of RSG in this period. Only one field trip was carried out in Sheshrudbar in September both because of higher destruction in the area and higher aridity this year. Anticipated length of study was from June 2015 to June 2016. However, we could carry out all our field studies during the growing seasons of 2015. However, the informational booklet is remained to be completed in near future.

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
Car rental (including fuel)	£900	£1400	-500	More money was spent because rate of car rental was drastically increased this year and many drivers receive more money in the mountains off roads.
Local guides	400	450	-50	I used two accompanying persons together with more personals of local guides in Golestanak Protected Area
Food and accommodation (during 4 months)	1320	1020	+300	Less money was spent for accommodation because of free accommodation offered by the Department of Environment, Sari.
Portable computer (Dell-Latitude)	570	978	-408	Microsoft surface book. I bought a notebook with high capacity of battery because of no electricity during field studied in Golestanak Protected Area. I predicted to purchase the

				computer in lesser rate, but the prices didn't change after bank sanction.
Camera (Professional Canon)	400	437	-37	Camera Canon 750D
GPS navigator	350	350		
Materials for plant collections (including plastic bags, Herbarium press, papers, etc, GPS, etc)	90	100	-10	
Informational posters in school and Universities	350	145	+205	
Cost for a seminar in the University (for students and local guards) and a biodiversity fair	400	100	+300	Part of expenses was paid by the University office
Tent	200	-	+200	
TOTAL	£4980	£4980	0	

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

In the next steps I should concentrate on following items:

- Testing this methodology on other areas of Central Alborz Mts and some other protected areas of Alborz and Zagros mountains.
- Searching ethnobotanical aspects of endemic and rare plants in all distributional areas of the plants.
- Organizing bi-monthly training courses and seminars for protection guards of Mazandaran department of Environment and Mazandaran NGO groups.

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?

I used the logo in all publications and seminars presented during the project and also in the poster presentation in Brazil 2016.

11. Any other comments?

I would like to thank you once again Rufford Small Grant (RSG) for this invaluable support. I also indebted to Jane Raymond for her always friendly help and supports. Certainly, this help is the first financial support for the conservation and support of vegetation of flora of Iranian mountains. I am sure the project was very important especially for conservation guard who are in direct connection with protection and conservation of wildlife. All school students have been very satisfied when we presented the plants and when we explained about endemism and threatened plants. I think this project can be a very good point of start for public awareness about endemism and importance of plants in ecosystems. This is particularly true for Iranian ecosystems with many unknown plant and animal taxa. Finally, I should thank Prof. Dr Shahin Zarre (University of Tehran), Prof. Dr Jurgen

Dengler (University of Bayreuth, Germany) and Dr Anna Kuzemko (Ukraine) for their evaluations of the project and critical comments for carrying out the project.