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. 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	Yelena Gambarova
Project title	Rare vegetation monitoring in the Gobustan National Park, Azerbaijan
RSG reference	24.01.10
Reporting period	July 2010 - July 2011
Amount of grant	£2500
Your email address	elenag@risk.az or YGambarova@azuni.net
Date of this report	May 2011

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
Development of Digital Framework 1: geographical database design and creation of specialised GIS environment			×	We created geographical database consisting of relevant spatial data: orthorectified satellite multi-spectral data, various spectral indexes, topographical data and map template.
The Field Works 1: The preliminary vegetation survey			×	Because of scattered distribution of vegetation these fieldwork activities were done in different locations. Route planning is usually carried out to achieve a single objective such as to minimise transport cost, distance traveled or travel time. In order to find an optimal route we needed topography maps and maintenance facilities. Printed map sheets with patch boundaries overlaid on the image, as well ancillary information such as determination of optimal diversion route to object of interest, were taken into the field.
Development of Digital Framework 2: development of classifiers software		×		In this stage we developed tools for designing, learning and testing of classifiers and performing classification on real data. But software development had some of inherent difficulties that affected the project: the programme took a lot of time to install.
The Field Survey 2:			×	Field Survey 2 was conducted to: √ Identify the floristic and structure of the vegetation type √ Provide confirmation of rare plants recorded in vegetation samples (releves) √ Soil types identification The Field Survey 2 was conducted in order to collect qualitative and quantitative data and information on actual rare vegetation classes to be use for supervised classification analyses.
Rare vegetation classification			×	We will perform a supervised classification of SPOT5 scene of the Gobustan National Park area using the maximum likelihood classifier and classification accuracy.

The Field Survey 3:			×	During the surveys we highlighted some potential threats facing to rare vegetation in the Gobustan National Park.
Comparative method using Normalized Difference Vegetation Index (NDVI)			×	NDVI change was taken an account on the changes which happen in rare vegetation distribution in the Gobustan National Park between 2004 and 2007.
Education and public awareness activities: reporting and presentation		×		Team members organised educational lessons on the "Rare and endangered species and their protection against disappearance" for schoolchildren. Two training sessions were conducted on the "Using new Space Technologies for rare vegetation monitoring" in Training Centre, Baku.

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

Unexpected hot weather in Azerbaijan (there has not been such weather in this region for the past 20 years) has caused fieldwork problems in August 2010. Our fieldwork has been stopped in periods of extremely high temperature (45°C).

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

- The most important outcome is that rare vegetation monitoring using remote sensing approach gave significant results. During the project, detailed and updated information about rare vegetation communities was collected and presented, a database on the status of these species and their habitats in selected sites combined and the acquired data skillfully processed. The statistical analysis carried out on the NDVI values in different years show disappearance of rare vegetation.
- The data we are producing are crucial to design conservation and management strategies for rare vegetation, and also to identify sensitive areas for the spatial zoning scheme, particularly in the Gobustan National Park to be created in the short term.
- The recommendations which aim to reduce threats to rare vegetation and protect each species were determined.

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

Field surveys: Local people participated in our project as guides. People form the national park administration also participated in field tasks.

Education and public awareness activities: By supporting teachers and head school our team organised educational lessons for schoolchildren and students.

Project results dissemination: Results of the project were disseminated to the target audience and stakeholders, including local scientific communities.

Additionally we told about the project with reference persons and gave a briefly presentation of the project to the communities.

5. Are there any plans to continue this work?

My objective is to continue this project to a greater extend. We aim to complete planned activities which will include obtaining more information about *Tamarix* distribution from 2004 to 2007. The result of this study have shown the rapid growth of *Tamarix* between 2004 and 2007. Comparatively, the area occupied by *Tamarix* in 2007 is larger than twice the size of the territory in 2004. Today, *Tamarix* occupies suitable habitat both the Gobustan and another coastal parts of Azerbaijan. Analysis of biological and ecological characteristic of *Tamarix* and its effect on the ecological environment (including rare vegetation) demands special optional research efforts, more surveys and ground measurements. We have intention to continue what we were able to start last year very successfully, with the aim to improve scientific investigations, increase the public's awareness and achieve political decisions in order to safeguard rare vegetation in the regions of Azerbaijan. Details of planned future activities will be included in the application for a second RSG.

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

- The project results will be submitted to the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan.
- We shall also share the results with the stakeholders working in the protected areas for follow-up action.
- Coordination of Azerbaijani teachers, students, and other groups interested in preserving their ecosystem.
- We have shared our experience and knowledge through magazine and newspaper articles, short-courses and conference presentations. Though the results of our work have already been reflected in published papers of the national and international journals, I am going to continue publication of scientific articles in peer-reviewed journals.

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

The project period over which the RSG was used run from July 2010 to June 2011.

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
Notebook	500	470	+30	Price difference
Navigation GPS Recevier	200	0	+200	Covered by other source
Determination of test sites and search of optimal routes to the topography maps	200	0	+200	In order to find an optimal route we needed topography maps and maintenance facilities.We involved stakeholder from the National Institute of Geography

GPS measurements in the points of the test sites	1000	1000		
Seasonal expeditions for providing details of the rare vegetation growing in each site

Travel and local transportation (vehicle rent and fuel)
Fuel | 300 | 659 | -359 | Bad weather conditions at the time of surveys made it more difficult to stay in open air.The time of Field surveys was shorten because of high temperature (+45°C) in August 2010 and additional trips were organised in September 2010. |
Publication £79	100	79	+21	
Project outcomes presentation: £213 Leaflets printed: £20	200	233	-33	Included 3 training sessions and plus several small group meetings
Communications and Internet Wireless Digital Card 8Gb USB 2.0 Flash Drive	0	123	-123	Not contemplated in budget. Necessary to coordinate with local partners
Total	2500	2564	- 64	

Exchange rate: 1£ sterling = 1.269 AZM (Azerbaijani Manat)

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

The important next step is submission our results to the local government and through the website.This project will help to establish the biodiversity status of the vegetation in Gobustan National Park to convince the policy maker to change the conservation status of the vegetation populations presented in this research.

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 RSGF logo in presentation materials at educational lessons "Rare and endangered species and their protection against disappearance" and during the training course "Using Remote Sensing and GIS for Rare vegetation monitoring". Also I used the RSGF logo in Information brochure "Rare vegetation of the Gobustan State National Park under close attention".

As well, some information about the project has been shared through the internet: for example, some omments about this project were post by Yukie HORI - Coordinator of United Nations Convention to Combat Desertification (UNCCD) on website:

http://www.unccd.int/publicinfo/partners/stories.php?newch=gobustan

11. Any other comments?

The project team very thankful for the support the RSGF which provided recourses for this research. Without the financial support gained from the grant the research would not be able to be done and completed. We hope to continue our relationship with Rufford Fund as we move forward with the project.