

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	Ghayet El Mouna Hajji
Project title	Genetic Analysis of Barbary deer in Algeria: implication for conservation
RSG reference	9000-1
Reporting period	18 months
Amount of grant	£6000
Your email address	gayahajji@hotmail.com
Date of this report	31 th July 2012

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 distribution area of Barbary deer in Algeria			OK	After prospection of the Barbary deer range in the north eastern of Algeria we noticed that in this relatively small area the habitat of red deer appears to be intact. But we could only see few signs (faeces, hairs) indicating the presence of this species. Still, stochastic threats to the population are increasing. The most important threat that is causing the regression of Barbary deer in its whole distribution range is poaching.
Determine the genetic variability of the Algerian natural Barbary deer population		OK		Considering the small number of samples we collected in the wild, we will determine only the mitochondrial variation and then compare it with our results in the Tunisian side (Hajji <i>et al.</i> 2007, 2008). Genetic analyses are still going on.
Determine the genetic sub-structure of Barbary deer in Algeria	Ok			The sample size is not sufficient to conduct a genetic study at the population level in Algeria. However, results will be compared to the Tunisian finding.
Impact of different stochastic factors on genetic variability		Ok		In fact, stochastic factors had a direct effect on the population by reducing its size and this species become increasingly rare. Consequently the genetic variability is reduced and the degree of threat increases. This will be confirmed by the molecular analysis (in progress).

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

At the beginning of the project (January 2010) my team partners, working in a public organisation, had some difficulties to work for the project because of the complexity of bureaucratic procedures. Their participation in the project has generated considerable debate at the administrative level. So everything has been stopped for almost 9 months and my work plan was shifted.

Fortunately, I have found new partners from the University of Annaba (Beji Mokhtar University) who are very interested in this project on Barbary deer and only in October 2011 we were able to start the field work.

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

3.1. Scientific results.

Forests of north-eastern Algeria, the typical habitat of Barbary deer, were not accessible during the last decade because of the instability of the political situation; that is why some ecological information on the population (size, density, distribution) are unknown or uncertain. The population of Barbary deer in Algeria is concentrated in a small area and is in continuous decline; nobody was able to do a census or ecological study on this species and its habitat. All existent data concerning this species and its habitat are not actualised and are still being used!!

We contributed through this RSGF project to the actualisation of some data concerning the distribution range of this species and the identification of different threats hampering its progress. This information is essential to subsequent studies (ecology, census).

After field prospection in the north-eastern forests of Algeria and according to some persons working in El Kala National Park, Barbary deer does not exist outside the protected areas only few individuals are still free in the wild. These few deer escaped from poaching and took refuge in the mountainous inaccessible areas.

The population number is still low to be overseen, so the official population size (estimated to be around 2000 animals) is overestimated. It is true that I have not done a census study but compared to the situation in Tunisia where I have been working on this species for many years, the population size in Algeria seems to be very low considering the rare signs of deer presence in the forests.

The second point of my field work results is the identification of different threats which are operating on the population of Barbary deer in the north-east of Algeria. In order to get a clear overview on the situation, I have interviewed several persons working on wildlife conservation or related fields (director of the NP El Kala, Forestry engineers, director of conservation and wild fauna, professor of biology in the university) and I was able to identify the different threats which have hampered the progress of Barbary deer population in Algeria. I have compiled all information with a panel of recommendation for the recovery of Barbary deer in one publication (*Le cerf de berbérie: menaces et conservation*) for an Algerian review. This paper has been sent to the editor of this review in February 2012.

The third scientific outcome of this project is the genetic study which is still going on and results yielded will be used in publication for the international scientific community.

3.2. Public awareness.

Apart from the intrinsic goals, the project had additional and subsequent outcomes. In fact, thanks to the Rufford Small Grant, we had the opportunity to work closely with some conservationists in Algeria; through this project we have established a network of collaboration between geneticists and governmental body in charge of nature conservation. Our work has served to propose a management plan for Barbary deer in Algeria. This has strengthened links between us (researchers) and local authorities since they are now inviting us in their different workshops and all national manifestations concerning Barbary deer, they are also more cooperative and helpful.

I am now in constant contact with people who works for the recovery and conservation of Barbary deer in Algeria. An educational programme is prepared in order to warn people to the need to

conserve and protect Barbary deer. In September 2012, I will participate in a workshop dealing with census techniques and deer rehabilitation; it will be held in Beni Salah National Park in the north-east of Algeria. On this occasion I have prepared a poster figuring the name of the Rufford Small Grant Foundation with emphasis on the necessity of conservation of this species hoping that during this process the potential of the species as a flagship for Algeria forests conservation will be perceived.

3.3. Collaboration and network.

Beyond the scientific results, the most important outcome of my project on this North African flagship species is the extent to which conservation action in Algeria can be achieved and the involvement of different stakeholders.

Thanks to this RSGF project I have established good contacts with national and international experts in wildlife conservation. I am, currently, thinking to create an association for Barbary deer conservation with the collaboration of some French and Algerian experts.

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

Young students and scientists were involved in the field work of this project. They are motivated to start their own conservation studies on the ecological aspects of this emblematic species and its habitat; I am already supervising a doctoral research on the ecology of Barbary deer.

In October 2011 a talk on a conservation genetics study of Barbary deer was given at the University of Beji Mokhtar in Annaba. Talks and meetings about the project were given at the Zeralda center for Barbary deer rehabilitation and conservation to provide concrete ideas of studies that can be performed on this species all participants (forestry engineers, biologists) showed interest in the project and wanted to use my data and protocol for the establishment of a new deer captive population. Thanks to this RSGF project, I became almost the expert of Barbary deer in its whole distribution area in Tunisia and Algeria. I am solicited by all persons (students, scientists and experts) who want to undertake a scientific study on this species in North Africa.

The RSGF allowed me to update my data on this species in its whole distribution range.

5. Are there any plans to continue this work?

Our work on Barbary deer has started many years ago in the Tunisian side and will concern in the future the whole distribution range of this species. We would like that our new data and finding in this project will serve to consolidate the population of Barbary deer and contribute to its progress. In fact, Barbary deer is the only and last deer species in Africa and its maintenance constitute a challenging mission for all conservationists

The scientific work (ecology, census) will be continued and enhanced with the collaboration of international experts in red deer management. We are preparing an action plan to ensure the viability of this species. To reach this goal we will collaborate with the Tunisian and Algerian forestry departments.

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

Apart from the Rufford Small Grant Foundation website, a series of publication in an Algerian local review will be done. The first paper is already submitted in a biannual review edited by the forestry department of Algeria.

The genetic data when completed will be also published in an international scientific journal targeting the scientific community. Posters and oral communication will be also given in scientific manifestations.

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

The Rufford Small Grant was used over the period of 18 months. The intended period was 12 months but as I explained in point 1, my plan was shifted and I have started the field work 9 months after the presumed date. Hopefully everything worked fast and good after the start of the project. Still, the collection of faeces was very difficult because of the size of the distribution range and the density of forests. The laboratory work of the samples collected could not be finished yet as faeces represent challenging conditions in genetic analysis. It will be finished this year and the results will be published thereafter.

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
Sampling material	150	-	+150	Sampling material has been supplied by Beji Mokhtar University and this amount has been spent for other items
Sending of samples	150	-	+150	Samples have been transported in the plane
Food for a 3 person-team	1350	1177	+173	The team managed to save on food to compensate the higher expenses in car rental
Shelter for a 3 person-team	2025	2041	-16	
Car rental	1890	2944	-1054	Has cost more than expected (117£*25 days) this is due to driver and gasoline expenses
Gasoline	87	-	+87	Included in car rental costs
GPS	270	-	+270	We used our personal GPS
Total	5922	6162	-240	The overall expenditure fits more or less the planned budget.

Local exchange rate: 1 £ sterling = 128,39 Algerian Dinar

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

The laboratory work has to be completed, the results published in a scientific journal. An association is going to be established in order to coordinate all projects and actions to be executed to enhance the protection of this threatened species and ensure its recovery and long term viability. A concrete project is actually being discussed.

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?

The RSGF logo has been used in my PPT presentation as an oral communication in a Mediterranean congress on Biodiversity held in Annaba in October 2011. I am preparing a poster to be presented in a workshop in Algeria in September 2012; the poster figured the RSGF logo on it.