

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	Paul Bartlett
Project title	Identifying wild populations of rare Birch in Georgia
RSG reference	14053-1
Reporting period	2 nd September 2013 – 29 th March 2014
Amount of grant	£3116
Your email address	Paul.bartlett@stonelanegardens.com
Date of this report	29 th March 2014

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
Locate wild populations of <i>Betula megrelica</i>			YES	Wild populations discovered on Mt Jvari and Mt Migaria.
Study the populations, collect seed and plant material for analysis			YES	Detailed study carried out. Seed collected from many plants. Stem material collected from several sites and wrapped for transit.
Assess extent of populations and threats		YES		Full studies of the plants in my immediate search area were carried out. In addition, I detected other sites in the region that need further investigation. Threats identified.
Share seed with Tbilisi Botanic Garden			YES	Seed from collections passed to Manana Khutsishvili, Head of Herbarium, and Tbilisi Botanic Garden.
Carry out analysis of plant material back in UK			YES	Material forwarded to Queen Mary University of London at end of September 2014. Flow cytometry revealed probable ploidy level of 12x (Dodecaploid). This is consistent with <i>Betula megrelica</i> . QMU carrying out further molecular tests.
Prepare and store seed			YES	Seed dried, pests eliminated. Seed securely stored for winter.
Write project report in collaboration with Tbilisi Botanic Garden / Institute of Botany			YES	Full report completed. Approved by Manana Khutsishvili (Georgian partner).
Forward report to Georgian Government, Georgian NGOs and UK institutions.		YES		Report forwarded to Rufford Foundation. Available to the public on Stone Lane Gardens website. Forwarded to Head of Biodiversity Protection at Georgian Ministry of Environment and Natural Resources Protection. I am in process of forwarding report to Georgian NGOs and other UK institutions.
Propagate seed and grow in nursery for eventual planting in our National Collections.		YES		I have just started propagating the seed collected in Georgia. Some seed has now germinated.

Carry out analysis of plants grown from seed	YES			This cannot be done until plants achieve a year's growth. Scheduled for analysis in winter 2014/15.
Distribute plants to other botanic gardens in UK	YES			I will distribute plants once they have achieved enough growth to transplant successfully. This is scheduled for winter 2015/16 unless growth is quicker than anticipated, in which case they may be distributed during winter 2014/15.

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

The second part of my time in Samegrelo was hampered by bad weather. This made searching for *B. megrelica* high on the mountains difficult due to poor visibility. However, we did not find terrain of suitable habitat anyway in that area, so I do not think this made a significant impact on the outcome.

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

- i Successful location and mapping of wild populations of *Betula megrelica*.
- ii Collection of seed from these populations.
- iii Molecular analysis confirming identification as *Betula megrelica*.

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

Local guides used. A local councillor, a forester and a shepherd. Managed by botanist from Tbilisi Botanic garden. At this stage of the project, it is not practicable to involve the local community as a group. However, if a conservation programme can be put in place, then the participation of the local communities will be essential.

5. Are there any plans to continue this work?

Yes. We need to fully explore other likely habitats in the region so that we have a full understanding of the extent of wild populations of this rare birch. Also, we need to involve other agencies to persuade the Georgian Government to protect these areas. More DNA studies are scheduled to be carried out by Queen Mary University of London to understand the origins of this species.

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

An initial news report of our project was published in *The Plantsman* magazine, *Plant Heritage* newsletter, *Devon Country Gardener* and several West Country newspapers. We will submit our full research for publication in the major scientific and botanical journals, along with arboriculture and forestry journals. Our initial report is already available on the research section of our website <http://stonelanegardens.com/about-us/research-publications/>. The research will be included in future editions of *The Genus Betula*, the definitive birch monograph published by Kew.

Seed collected is being grown on at Stone Lane Gardens and young plants of *Betula megrelica* will be distributed to botanic gardens and other *Betula* collections in the UK.

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 grant was used from September 2013 through to March 2014. The fieldwork was carried out in September 2013 and the time since then has been spent having molecular tests carried out by Queen Mary University of London, compiling our report and propagating the seed collected in the field.

This matches quite closely the anticipated timescale. However, the project ran over-budget during March 2014. This was caused by under-estimating the work involved in compiling our report.

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
Return Flight London, UK to Tbilisi, Georgia	350	£447	-£97	Increased fares
Return Train fares from Exeter, Devon, UK to London Heathrow, UK	114	£138	-£24	Increased fares
Salary of Manana Khutsishvili	500	£423	£77	Did not charge me for work in Tbilisi.
Salary of Temuri Siukaev	350	£293	£57	Did not charge me for work in Tbilisi.
Salary of Bejan (including transport/fuel)	400	£320	£80	Actual cost lower than estimated.
Salary of Roman Tolurdava (including 4x4)		£273	-£273	Additional guide hired by Tbilisi staff.
Salary of Shepherd (including hire of horse)		£60	-£60	Additional guide hired for transportation of goods by horse.
Fuel for Tbilisi Botanic Garden car	200	£78	£122	Used smaller car (not 4-wheel drive) so much reduced fuel costs.
Food	150	£242	-92	2 additional guides to feed.
Accommodation	480	£257	£223	Cheaper accommodation arranged.
Phyto-sanitary Permit	10	£10		
Post expedition data collation and report writing	562	1124	-£562	Compiling data and writing the report took twice the amount of time anticipated.
Total	3116	3665	-£549	Deficit funded by Plant Heritage grant of £500.

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

This project needs to continue in three directions: -

- i Further study of the area to identify other wild populations on likely north/east facing mountain slopes. This would help us define the boundaries and size of the wild populations. I have already identified several likely nearby sites.
- ii Communicating our findings to the conservation groups that already work in Georgia so that they can co-ordinate an approach to the Georgian Government for the implementation of a long-term conservation strategy.
- iii Grow on the plants raised from seed collected from the wild populations. Examine the molecular characteristics of these plants in comparison with *B. medwediewii* and other birch species in an attempt to understand their evolutionary history.

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

Yes. I publicised the crucial role played by the Rufford Foundation in all the press releases, on our website and in our report. The logo was used throughout.

11. Any other comments?

The funding of this 1st stage project by the Rufford Small Grants Programme has enabled me to succeed in locating and studying the rare birch *Betula megrelica* in the wild. To my knowledge, the first time anyone has done so since 1971. Whilst this is significant, there is much more to be done if we are to fully understand the ancestry and scope of this rare species. At the same time, we need to influence the Georgian Government to recognise its conservation status and the need to protect its habitat.

I will be applying for a 2nd Rufford Small Grant so that we can continue our research both in the UK and in the field and start to tackle the difficult issue of protecting the wild habitat. This will involve considerable help from the various NGOs operating in Georgia.