



Darwin Initiative Overseas Territories Challenge Fund Final Report

This report should be completed and submitted within a month of agreed end date of project

Darwin Ref Number	EIDCF014
Darwin Project Title	Developing native seed mixes for habitat restoration in the Falklands
Country (ies)	Falkland Islands (UK collaboration)
Award holding Organisation	Falklands Conservation, Jubilee Villas, Ross Road, Stanley, Falkland Islands, FIQQ 1ZZ
Partner Organisations	Royal Botanic Gardens Kew (RBG Kew), Falkland Islands Government (FIG)- Department of Agriculture (DoA) and Environmental Planning Department (EPD)
Grant Value	£XXX
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Author(s), date	Alexandra Davey, Native Seed Mix Project Officer, Falklands Conservation; Rebecca Upson, Falkland Islands Climate Change Project Manager, RBG Kew. May 2013

1. Challenge Fund Background

1.1 Introduction

The Falkland Islands are situated approximately 600 km from the South American coast, consisting of two large islands West and East Falkland and an estimated 750 further outer islands; the total land area is roughly 12,200 km² (see Figure 1). Due to its position between the Antarctic and South American continents, the Falkland Islands contain plant species at the eastern and southern limits of their distribution, holding unique genetic variation which it is important to conserve in the face of changing climates and other threats. Six of its 14 endemic species are globally threatened and one is near threatened. Nationally, 22% (39 species) of the native vascular flora is at risk of extinction.

Agriculture makes an important economic, cultural and social contribution to rural life in the Falklands and is based on the production of wool and meat from sheep grazing of native grasslands; in 2011 income from agriculture exceeded that of tourism, another key industry in the islands.

During the recent OTEP-funded 'Falkland Islands Native Plants Programme' project (FAL601) lead by Falklands Conservation (FC), soil erosion was identified as a major concern across the Falkland Islands for both farmers and conservationists alike. These findings were based on first-hand fieldwork and consultation with landowners. Soils in the Falklands are largely shallow, leached peats that are particularly prone to drying out and erosion. The dramatic scale of erosion seen today is largely the result of a number of key threats to the biodiversity of the islands identified in the Falkland Islands Biodiversity Strategy 2008-18; namely unsustainable land management practices, accidental burning and climate change. Natural recovery is extremely slow or non-existent due to slow soil development as a result of the cool climate and low soil activity.

The majority of the 17 recently identified Falkland Islands Important Plant Areas (FAL601) are at risk from the impacts of soil erosion to a lesser or greater extent. Besides the loss of biodiversity at all sites impacted by soil erosion, there is also an economic cost owing to land

no longer being available for grazing. In addition contamination of sheep's fleeces by the considerable amount of dust which blows off eroded areas leads to a reduction in quality of the agricultural product.

Figure 1. A map of the Falkland Islands



To date some progress has been made towards tackling the problem of erosion and restoring areas by planting tillers of tussock (*Poa flabellata*) or blue grass (*Poa alopecurus*) on eroded or recently cleared coastal sites. However this technique is extremely labour intensive and limited to establishing a single species on a single substrate. In addition to the recognised threats to key conservation sites and agriculture, activities such as minefield clearance, the removal of invasive species and the construction of infrastructure for the oil industry are set to create further disturbance to habitats. Research is therefore urgently needed into techniques for halting the erosion on a variety of different substrate types, ranging from recently exposed peat to bare clay patches resulting from many years of erosion. The Challenge Fund project is the first step in addressing this important knowledge and implementation gap.

1.2 Project Objectives

To address the conservation problem described above the key objectives of the Challenge Fund project were as follows:

1. Review of current vegetation data held at FC with the aim of finalising two groups of restoration trial species, drawing on successful outcomes of recently completed OTEP project (FAL601). One set of species will form a native pasture mix for use in areas where invasive plant species have been cleared; the second seed mix will comprise species that are good colonists of bare ground to target restoration of severely eroded sites.
2. Identification of sites for native restoration species' germination trials. In the Falklands it is vital but can be logistically time-consuming to visit a range of landowners and actually secure areas where work can be carried out and which we can check are fully

appropriate for the planned research. This would include discussions with individual farmers, the Department of Agriculture (DoA) and Stanley Nurseries.

3. Survey of 1998 trial restoration sites set up using introduced grasses by a PhD student who did not complete her project. Assessment of their usefulness to the planned main project. Professor Jim McAdam, the original supervisor, has agreed to provide access to the methodological details and data gathered.
4. Consultations with the DoA and Stanley Nurseries to identify the mechanism at the end of the main project that will ensure a commercially viable source of seed is available for all species in the developed seed mixes. This would include securing land for all species to be grown and where seed could be harvested easily for sale.
5. Intensive seed collecting and cleaning of target species ready for a full Darwin project; this would include mobilisation and coordination of seed collecting/ cleaning groups led by the project officer, using volunteers and partner staff. Without such pre-project focused collecting trips we would not have available the amount of seed necessary for large scale restoration trials. The recent OTEP Native Plants Project which set up a native plants nursery at Stanley Nurseries demonstrated the need to use seed for propagation from the previous season. Through the existing collaboration with Kew's Millennium Seed Bank much basic information has been gained to enable the up-scaling activities required in the main project.
6. Final report, summarizing the outcomes of the scoping period and how these form the basis of the main project.

The successful completion of these objectives would build the necessary foundations to apply for a full Darwin Initiative project. The purpose of the resulting project as stated in the Challenge Fund grant application was as follows:

1. Reduce soil erosion and improve the status of biodiversity of productive land in the Falkland Islands by providing viable habitat restoration options using native species seed mixes
2. Improve the methodology in place for management of sites after the removal of invasive plant species
3. Encourage the take-up of native seed mix by the agricultural community and private sector

2. Challenge Fund Activities

2.1 The role of project staff and partners

The majority of work under this Challenge Fund grant was carried out in-country by FC staff. A project officer, Alexandra Davey, was employed in September 2012 to coordinate all project activities until its conclusion in May 2013. Prior to travelling to the Falklands she received training at the Royal Botanic Gardens Kew (RBG Kew) from Dr Rebecca Upson, project principal and former plants and habitats project officer at FC, and from Tom Heller, RBG Kew seed collection coordinator for the UK overseas territories. Statistical advice was given by visiting statistician and FC volunteer Brian Bond.

In-country partners from the DoA Andrew Pollard and Jo Tanner assisted the work through consultation on the selection of target species at the outset of the project, provision of laboratory facilities for cleaning and processing seeds, facilitation of communication with the

farming community and participation in the project partner and stakeholder meeting to discuss the future seed trials.

Environment Officer Nick Rendell at the Environmental Planning Department (EPD) offered consultation of the possible location of trials and coordinated the application for permission to work on FIG land. He also assisted with the necessary permissions required for exporting seeds from the Falklands back to the MSB.

The only UK partner was RGB Kew who provided expert advice as well as workspace for the project officer whilst writing up the project reports in the UK. Tom Heller visited the islands from 17th January to 1st February 2013 to oversee the seed collection effort and to assist with the drying and shipment of seeds. The dried seed collections were sent back to the UK for further cleaning, storage and germination testing at the MSB. MSB's habitat restoration expert Kate Hardwick and Ted Chapman from the MSB's UK Seed Hub project, also contributed knowledge and experience to the planning of the full project proposal.

2.2 Project activities

In the section below each of the major activities of the project are discussed in turn. Activities 1-5 relate directly to the first five objectives of the project with the sixth objective being the completion of this report.

Activity 1: selection of target species

The initial selection of target species was made in October 2012 by Dr. Rebecca Upson and the project officer prior to her departure to the Falkland Islands. The choice was made using vegetation data held at Falklands Conservation and Dr. Upson's expert knowledge of Falklands' flora. Species were selected based on their ability to create ground cover, establish in eroded areas and/or their grazing value. Species which were known to grow in sizeable, relatively dense populations were favoured to ensure large collections could be made within the time available.

The proposed list of species was circulated to project partners and to Stanley Nurseries who have in-country experience of cultivating native species from seed. As a result of this consultation changes were made to the existing list. These were the addition of *Luzula alopecurus*, which was suggested as a good indicator species of healthy pasture by the DoA, and the removal of *Cortaderia pilosa* on the grounds that it was not a valuable grazing species and that a previous germplasm project in the Islands had achieved very low germination success.

The final list which was used for the project is shown in Table 1. Species are listed according to whether they were to be part of the 'coloniser mix', intended for trials on heavily eroded ground or the 'pasture mix', for use on less severely degraded areas such as following the removal of invasive species.

Table 1: Table of target species to be included in the two seed mixes.

Coloniser mix (for use on eroded ground)		Pasture mix (to add grazing value to less severely degraded areas)	
Latin name	Common name	Latin name	Common name
<i>Acaena magellanica</i>	Prickly burr	<i>Carex fuscula</i>	Dusky sedge
<i>Gunnera magellanica</i>	Pig vine	<i>Deschampsia flexuosa</i>	Wavy hair grass
<i>Juncus scheuchzerioides</i>	Native rush	<i>Elymus magellanicus</i>	Fuegian couch grass
<i>Leptinella scariosa</i>	Buttonweed	<i>Festuca contracta</i>	Land tussac
		<i>Festuca magellanica</i>	Magellanic fescue
		<i>Hierochloe redolens</i>	Cinnamon grass
		<i>Luzula alopecurus</i>	Native woodrush
		<i>Poa alopecurus</i> (two	Blue grass

		ecotypes)	
		<i>Poa flabellata</i>	Tussac
		<i>Trisetum phleoides</i>	Spiked oat grass or native fog
		<i>Uncinia macloviana</i>	Hook sedge

The species *Poa alopecurus* is known to exhibit very different morphology depending on whether it is found growing on a peat or sand substrate. Both habitats (blue grass dominated acid grassland and blue grass dominated dune grassland) are threatened in the Falklands and may require different restoration approaches. As a result of this and pending further research into any taxonomic difference between the two ecotypes, it was decided at the planning stages that separate collections would be sought from this species growing on sand and on peat.

Activity 2: identification of sites for seed mix trials

On 9th April a project meeting was held at the DoA to which all Falklands based project partners and representatives from Stanley Nurseries were invited. The meeting agenda included discussion of germination testing, a pilot study and suitable sites for full scale trials. A full report of the meeting was written up at the time and is included here under Appendix 1. However, in summary the following points were agreed at the end of the meeting:

- If necessary, viability (germination) testing will be carried out in-country at the DoA rather than at MSB to speed up the return of seeds to the Falkland Islands.
- Emergence trials will be undertaken at Stanley Nurseries who would cover costs in return for revenue from sales of grasses once established.
- A pilot study would be extremely beneficial and FC was encouraged to apply for a grant from the FIG Environmental Studies Budget to undertake this work.
- Large scale trials will take place at Saladero and on Cape Pembroke (if relevant permission granted from FIG) and necessary fencing can be erected.
- It is important to undertake some trials on independently (non government) managed land. Goose Green Farm was suggested as a good option.
- The DoA will carry out soil testing prior to beginning any large scale trials to ensure sites are suitable and comparable.

Following the meeting the project officer met with the manager of Goose Green Farm, Keith Alazia on 23rd April 2013 to discuss trial sites. He was happy for trials to take place on the farm and a potential site was identified on an area previously cleared for crop cultivation. As a means of verification letters of permission for the work listed above are included in Appendix 2. A proposal to work on Cape Pembroke will be presented to the FIG Lands Committee on 12th June 2013 for a final decision on whether the project will be granted permission. However, we are assured by project partners at EPD that it is highly likely that the application will be successful as the majority of the work will take place within an area already fenced to exclude grazing due to the severity of the erosion problem within it.

Activity 3: survey previous restoration trial sites

On 11th September 2012 the project officer and Dr Rebecca Upson met with Professor Jim McAdam at the Falkland Island Government House in London to discuss the previous restoration work carried out during the '90s. He provided all the records still available from the uncompleted PhD research.

Unfortunately, as predicted by Professor McAdam, the experimental plots previously set up in the islands had not been maintained and it was not possible to relate treatments to the few plots which were still visible. Sheep were no longer excluded from the plots and there were no

records of when the fencing was removed. As a result surveys of the trial sites were not undertaken as they would have had little value to inform the current project.

However the results of the two years of research carried out by the former PhD student proved valuable in the consideration of treatments for seed trials. In particular positive results had been achieved with the addition of sheep dung to trials on bare eroded clay. The selection of treatments and the design of full scale restoration trails as part of a Darwin Plus project were discussed in detail during the Challenge Fund making best use of the existing data produced in the 1990s. Statistician Brian Bond who regularly spends time in the islands was involved in these discussions and drew up a draft design for the full scale trials (see Appendix 3). As a result of developments in the project, such as the confirmation of which sites could be used for trials, the draft needs to be revised before the start of the intended Darwin Plus project. Brian is currently working on this revision and the design of a pilot study.

Activity 4: consultation on mechanisms for viable seed production

Commercial seed production was discussed at the project partners and stakeholder meeting held at the DoA on 9th April 2013 (Appendix 1). This consultation proved invaluable in drawing on the DoA's expert knowledge of the seed commercialisation process for planning the objectives of the full Darwin Plus project. It was agreed that further research is needed before landowners are encouraged to take on commercial production of seed. Agricultural advisor Jo Tanner highlighted that the length of time necessary to reach full scale commercial production exceeded the scope of a two year Darwin Plus project. As a result further consultation was sought from restoration expert Kate Hardwick and Ted Chapman, who are both involved in the MSB UK seed hub project, on how they undertake small scale production for sale to seed companies for commercial scale bulk up.

This activity has been vital in ensuring the planned Darwin Plus project is realistic with achievable aims that are useful in the Falkland Islands.

Activity 5: seed collection

Site selection and planning of fieldwork

A preliminary plan of the field season was drawn up during training of the project officer at RBG Kew in October 2012. This was undertaken using expert knowledge and species distribution data collected as part of the Native Plants OTEP project (FAL601). Collection sites were selected based on the size and number of different target species populations present; thereby increasing the chance of ripe seed being available to collect on the day. The timing of collection for each species was decided based on the small amount of phenological data held at FC and dates of previous collections already held at MSB.

Due to the logistical and financial difficulty of making collections of each species with representative provenance from East and West Falkland the decision was taken to limit collection under the Challenge Fund award to East Falkland and its surrounding islands.

Volunteers

A volunteer workforce was established from FC's existing body of volunteers and from the conservation group based at the Mount Pleasant Complex (MPC). To raise awareness of the project and draw in volunteers from the wider community, articles were published in local newspaper (The Penguin News), the monthly publication from the DoA (The Wool Press) and on the FC website (www.falklandsconservation.com). An interview with the project officer was also broadcast on Falklands Islands Radio Service. Over the course of the four month collection period a total of 47 volunteers took part in seed collecting, many on more than one occasion.

Since it was not possible to collect on West Falkland due to issues of provenance a seed collecting workshop was held at Fox Bay on 18th February 2013. This aimed to build capacity for seed collection on West Falkland and to enable landowners to undertake collections on their land. It also served as a useful opportunity for consultation as to what outcomes farmers would hope for as a result of a full Darwin-funded restoration project.

Methodology

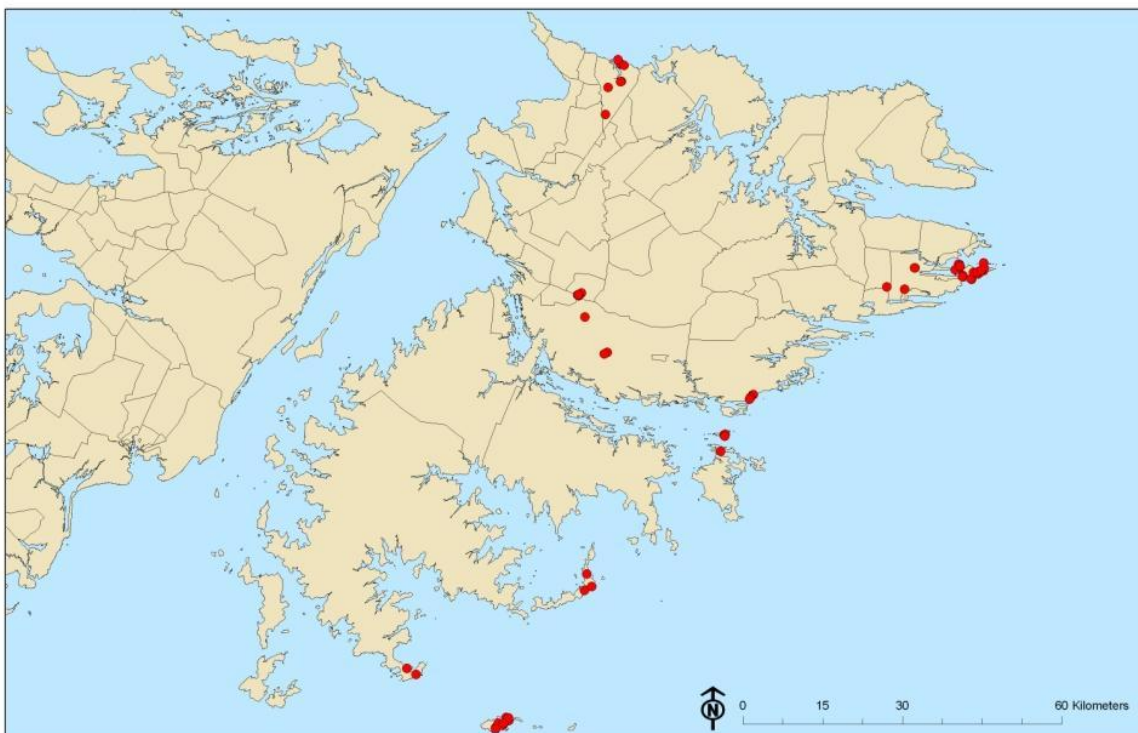
Seeds were collected following the MSB guidelines for seed collection. Specifically no more than 20% of the seed available on that day was harvested for each collection and care was taken to make sure that volunteers were spaced out to capture maximum genetic variation and did not overlap with each other's sampling area. With each seed collection three voucher herbarium specimens and a DNA sample were collected. All material collected has been sent back to MSB for safe storage. Once the herbarium specimens have been mounted at RBG Kew one per collection will be sent back to the Falkland Islands to be stored in the national herbarium.

Seed collection began on 1st Dec 2012 and ended on 23rd March 2013. Table 2. summarises the collection trips undertaken over this period. The distribution of these collection sites across East Falkland and surrounding offshore islands can be seen in Figure 2.

Table 2. Summary of seed collections

Coloniser Mix Species	Number of collections	Collection sites	Collection period
<i>Acaena magellanica</i>	3	Cape Pembroke, Surf Bay, Boxer Bridge	29 th Jan -7 th Feb
<i>Gunnera magellanica</i>	2	Bertha's Beach, Bull Roads	23 rd Feb -20 th Mar
<i>Juncus scheuchzerioides</i>	4	Cape Pembroke, Bertha's Beach Bleaker Island(Sandy Bay and near the settlement)	13 th Feb -2 nd Mar
<i>Leptinella scariosa</i>	4	Elephant Beach Farm, Bertha's Beach	6 th -23 rd Mar
Pasture Mix Species	Number of collections	Collection sites	Collection period
<i>Carex fuscula</i>	3	Cape Pembroke, Laguna Isla	20 th Feb -4 th Mar
<i>Deschampsia flexuosa</i>	2	Yorke Bay, Gypsy Cove, Arch Island	21 st Feb – 6 th Mar
<i>Elymus magellanicus</i>	4	Bleaker Island, Elephant Beach Farm, Bull Point, Kent Island	2 nd -20 th Mar
<i>Festuca contracta</i>	7	Mt Osborne, Sea Lion Island, Wireless Ridge, Elephant Beach Farm, Navy Point	9 th Jan -29 th Jan
<i>Festuca magellanica</i>	2	Sea Lion Island, Elephant Beach Farm	13 th -23 rd Jan
<i>Hierochloe redolens</i>	4	Sea Lion Island, MPA road near quarry, Yorke Bay, Boxer Bridge	5 th - 17 th Jan
<i>Luzula alopecurus</i>	4	Sea Lion Island, Hooker's Point, Top Tussac, Cape Pembroke	6 th Jan -8 th Feb
<i>Poa alopecurus</i> (growing on peat)	5	Sea Lion Island, Mt Harriet, Mt Osborne	17 th Dec – 20 th Jan
<i>Poa alopecurus</i> (growing on sand)	2	Hooker's Point	4 th -28 th Jan
<i>Poa flabellata</i>	7	Middle Island, Gypsy Cove, Sea Lion Island, Philimore Island	1 st -18 th Dec
<i>Trisetum phleoides</i>	3	Sea Lion Island, Surf Bay	15 th -18 th Jan
<i>Uncinia macloviana</i>	1	Laguna Isla	25 th Feb

Figure 2 The distribution of collection sites



As far as possible, equal effort was assigned to each species to achieve at least one sizeable, good quality and ripe collection. Variation in the number of collections made per species was due to several factors. In some cases, for example *Poa alopecurus* growing on sand, a small number of collections reflects the ease of collecting a large number of seeds at a single site. In the case of *Uncinia macloviana* however a single collection was made as this species was very difficult to find growing in large populations at high density. The large number of collections for *Poa flabellata* was the result of species phenology as this grass produced ripe seeds ahead of all the other target species and so could be the sole focus of the collection effort. At the end of the collection period a report of lessons learnt from seed collecting was produced by the project officer for future reference to wild seed collectors in the islands. This contains valuable information learnt through this project on the distribution, phenology, ease of collection and cleaning of each target species. A draft of this report is included in Appendix 4. Currently all of these collections are undergoing cleaning at the MSB (see Appendix 5). Following this process information on seed numbers and viability will be included into the seed collection report in Appendix 4.

Project dissemination and monitoring

In addition to the articles published within the Falklands to encourage volunteer participation (see Activity 5), the project was also featured in the UK overseas territories blog on the RGB Kew website (<http://www.kew.org/news/kew-blogs/ukots/falklands-seeds-for-restoration.htm>) and the April 2013 edition of the Darwin Initiative newsletter. In addition an article on the project was published in the FC biannual members' magazine which has a circulation of approximately 400 people around the world.

To ensure the project ran according to schedule and met the objectives set out in the original proposal a system of weekly progress reporting was established between the project officer and Dr Rebecca Upson. These reports were also reviewed by project partner staff at RGB Kew.

2.3 Key achievements of the Darwin Challenge Fund:

The key achievements of the project are listed below together with the appropriate source of verification:

- A list of 15 native target species for restoration trials identified in collaboration with project partners (Table 1.) including 8 grasses, 2 sedges, 2 rushes and 3 forb species as outlined in the Challenge Fund application.
- In consultation with project partners, 3 suitable trial sites identified each with a range of priority substrates for restoration research (Appendix 1). Permission granted to work at 2 of these sites from the relevant parties (Appendix 2) and permission pending from the Lands Committee to work on Cape Pembroke.
- Previous re-vegetation research reviewed and findings used to inform the experimental design of the planned restoration research (Appendix 3).
- Expert advice gained on the feasibility of commercial seed production which will be incorporated into the design of the planned Darwin Plus project (Appendix 1).
- 57 collections of native seeds for use in habitat restoration research currently being cleaned at the MSB (Appendix 5).
- Increased capacity for seed conservation in the islands through training of 47 volunteers and dissemination of lessons learnt over the field season (Appendix 4).
- Strengthened relationships between FC and the DoA, EPD, Stanley Nurseries, RBG Kew and the local farming community.

3. Outcome & Impact of Challenge Fund

Research into the use of seeds to address the issues of soil erosion and habitat restoration in the Falkland Islands is not possible without first investing considerable effort in making collections from wild plants. Due to the seasonal climate in the Falklands this must be done at least a year in advance of any trials being undertaken. Securing sites for these trials requires a considerable investment of time and labour in communication with landowners and site visits; the Challenge Fund has therefore been vital in creating the necessary conditions for this work to go ahead.

In addition over the seven months of project work in the islands there were many opportunities for interaction with the local community; these strongly confirmed the need for the project. All the land owners spoken to expressed interest in being able to sow native grasses on their land and those with an erosion problem were keen to receive advice on how to tackle it. Furthermore inquiries are regularly made to FC about how best to restore vegetation after environmental damage. During the project period this included enquiries following a large fire at Onion Range in December 2012 and in advance of planned construction work at the Mount Pleasant Complex. Currently the only advice FC is able to provide is based on a small amount of research and the only techniques demonstrated to work are not suitable for many areas or on a large scale. The Challenge Fund award has been the first step to being able to fully answer these questions with real benefit to conservation.

Currently preparations for a full Darwin Initiative funding application are underway. It was a unanimous decision at the stakeholder meeting in April 2013 that a pilot study would be invaluable to this research to inform the choice of treatments to be tested in the large scale trials allowing the most efficient use of the collected seed. Funding from FIG is currently being sought to implement the pilot study in the coming growing season (from September 2013).

A concern that arose during the Challenge Fund project was the change in funding for the UK overseas territories to the new Darwin Plus with a maximum project length of 2 years. This further increases the value of undertaking a pilot study in advance of the planned two year Darwin-funded project, to ensure we obtain data from three growing seasons.

Other difficulties encountered were the relatively little amount of data on the phenology of target species and the atypical weather experienced on East Falkland over the seed ripening period. December 2012 was one of the wettest on record and perhaps as a result seed from some species was observed to ripen over a month out of sync with what had previously been recorded. In some cases a fungal blight was also observed to have infected some seeds. To a certain extent the flexible planning of the fieldwork season counter-balanced this difficulty as sites were selected with more than one target species present so another ripe species could always be found. Although this may have slightly altered the number of collections per species the resulting impact on the intended Darwin proposal will be minimal. The uncertainty of ripening time also presented a further learning opportunity for the project. The project officer recorded observations of ripeness of target species present on every collection trip, building a picture of ripening for each species across East Falkland. This information was used to inform timing and signs of ripening sections of the seed collection report (Appendix 4).

4. Lessons

There was considerable opportunity for learning during the course of the project and many of the lessons learnt have been detailed previously in the report. In summary these include:

A) The practicalities of wild seed collection:

The logistics of making large collections of seed from wild plants taught us many lessons in terms of where and when good collections can be made. Techniques related to determining ripeness, timing and post harvest handling for each target species have all been recorded in the FC report 'Lessons learnt from seed collecting' in Appendix 4. With the addition of data on seed viability from the germination testing to be carried out at MSB (or DoA if required) this volume of knowledge will be highly useful for the planning of any future seed collection work in the islands. Information on the ease of collection and cleaning will be used to directly inform methods for successful bulk up of seed in the planned project as well as the purchase of any necessary specialist cleaning equipment.

B) The potential to foster positive relationships with the community:

This project clearly benefitted from FC's existing relationships with the community and we learnt that there is an impressive level of enthusiasm and willingness to be involved in botanical conservation fieldwork amongst FC volunteers. This encouraging lesson will be built in to the future project in creating opportunities for further community involvement and capacity building, for example in monitoring of experimental plots.

C) The unpredictability of the weather and its impact on phenology:

In recording phenological observations of target species across East Falkland over the field season we learnt the extent to which the timing of ideal collection can vary. This lesson is important for informing the monitoring of restoration plots and any harvest of seed being bulked up. It will be necessary to have a flexible approach to timing and closely watch phenological changes to ensure collection of data and seed are ideally timed.

In the Challenge Fund project it was not logistically possible to collect seed from representative populations of target species on West as well as East Falkland. In the future however, lessons A-C would allow efficient collection on West Falkland.

D) The challenges of commercialisation of native seed within a 2 year project

The lesson with the largest impact on the planned project arose from the project partner and stakeholder meeting in April 2013 (Appendix 1). It was made clear that commercialisation of native seed was beyond the scope of a 2 year Darwin Plus project and that currently more research is needed before landowners in the Falklands could be encouraged to take on seed production. As a result considerable thought has been given to the ultimate aims of the proposed Darwin Plus project.

Following consultation with staff at MSB's UK seed hub the planned project will now form the vital next step in the process of commercialisation and will ensure that the correct procedures

are in place to make commercialisation possible. The proposed project will undertake the first phase of bulking up of the existing seed collections and carry out urgently needed research into the suitability of a suite of species for commercialisation and use in restoration.

5. Project Expenditure

Item	Breakdown	Budget for whole project*	Actual Expenditure	Variance** as a %	Comments
Travel Costs	International flights (including DHL flight of seeds)	XXX	XXX	-6	
	Internal flights	XXX	XXX	-41	The decision to only collect seed from East Falkland and surrounding islands due to issues of representative provenance meant that less in country air travel was required.
	Vehicles	XXX	XXX	0	
Subsistence costs		XXX	XXX	-55	The original budget covered accommodation for Tom Heller (RBG Kew) whilst visiting the islands, however once the award was granted space became available in FC owned accommodation at no cost to the project.
Overhead costs		XXX	XXX	0	

Operating Costs					
Capital Costs					
Other					
Salary	Project Officer	XXX	XXX (+XXX under spend)	6 15 (if proposed assignment of under spend agreed)	* See section 6
TOTAL		XXX	XXX		

* please indicate which document you refer to if other than your project application or annual grant offer letter

** please explain any variance of +/- >10%

6. Other comments not covered elsewhere

From Section 5. Project expenditure:

The implementation of the Challenge Fund delivered some cost savings for a number of reasons. Most significantly these arose from the reduction in internal flights undertaken by the project officer and the accommodation being provided to MSB staff free of charge.

In a letter dated 28th January 2013 a variation to the planned budget was proposed suggesting that £850 of the funds assigned to MSB staff accommodation should be used to cover the cost of seed drying and storage equipment. Permission was duly granted for this change in the assignment of funds and the equipment was purchased by MSB staff in the UK.

However, FC project staff have since been informed that the cost of this equipment will be covered by MSB core costs and as such has no impact on the Challenge Fund budget. As a result there is currently an under spend on the project of £1093.

The course of the project has identified a clear need to carry out interim work in the islands before the start of a Darwin Plus project, namely a pilot study. The importance of this work is made even greater given the recent changes to UK overseas territories Darwin funding to now only fund projects with a maximum duration of two years. A source of funding for the pilot study has been identified in the form of the FIG Environmental Studies Budget and project partners have encouraged FC to apply for a grant to cover this work.

It is therefore proposed in Section 5 that the overspend be assigned to the continued employment of the project officer in order to write this funding application and also to continue working on the full Darwin Plus proposal which is a more demanding task given the necessary changes to fit the new Darwin Plus time frame. This extra time afforded to the project officer would allow for the best possible proposal to be developed in full consultation with project partners including staff at RBG Kew.

A strong case can be made for this use of funds not only on the grounds of the proposed outputs (completed Darwin Plus and ESB applications), but also because of the opportunities this continued work on the project would create to enhance the legacy of the Challenge Fund project and maintain the enthusiasm generated for the proposed Darwin Plus project.