



Department
for Environment
Food & Rural Affairs



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Department
for International
Development



Darwin Plus: Overseas Territories Environment and Climate Fund

Final Report

Darwin Project Information

Project Ref Number	DPLUS031
Project Title	South Georgia Habitat Restoration Project: Final Phase
Territory(ies)	South Georgia and the South Sandwich Islands
Contract Holder Institution	South Georgia Heritage Trust (SGHT)
Partner Institutions	Government of South Georgia and the South Sandwich Islands (GSGSSI), Royal Society for the Protection of Birds (RSPB)
Grant Value	£249,783
Start/end date of project	1 April 2015/31 March 2016
Project Leader Name	Professor Anthony Martin
Project website/Twitter/Blog etc.	www.sght.org www.facebook.com/pages/South-Georgia-Heritage-Trust/107047869335869 https://twitter.com/SGHTcharitysite
Report author(s) and date	Professor Anthony Martin, 29 April 2016

1 Project Overview

Globally, invasive alien species are second only to habitat loss in reducing biodiversity. This impact is especially pronounced on islands, and many have lost endemic fauna for this reason. This project aimed to address, and reverse, the profound damage caused by an invasive rodent to the ecology and native fauna of South Georgia, one of the largest islands in the United Kingdom Overseas Territories (Fig. 1). It was the third, and final, operation in a sequence which started in 2011 - the South Georgia Habitat Restoration Project (Fig. 2). The first two operations very likely eradicated rats from some 67% of their former range on the island. The third season of work treated the remaining areas where rats occurred - some 364km². If successful, it should leave South Georgia free of invasive rodents for the first time since soon after the island was discovered, and would be the world's largest rodent eradication by almost an order of magnitude.

South Georgia, a mountainous, glaciated island some 170 km long, lies just south of the Antarctic circumpolar front, 1750 km east of the southern tip of South America (see Fig. 1). It has no permanent residents and is visited by thousands of tourists each year. All visitors arrive by sea, there being no runway. All invasive alien species, of which there have been many, consequently arrive by the same means.

Named and claimed by Captain Cook in 1775, South Georgia was soon thereafter a magnet for sealers from the US and Europe. Unknowingly, they, and the whalers and fishers who followed in subsequent generations, allowed stowaway rodents, especially brown rats (*Rattus norvegicus*) to go ashore at many sites, and descendants of those stowaways subsequently spread throughout

the vegetated parts of the island. Accomplished predators, the rats consumed the eggs and young of millions of seabirds, to the effect that most species were greatly reduced in number and completely excluded from areas where rats occur. Another ground nesting bird - the South Georgia pipit - was similarly eradicated from most of the island, and was confined to the rat-free oases of offshore islands and a narrow strip of inhospitable coastline. It is found nowhere else in the world, and had lost well over 80% of its former habitat to rats.

The spread of rats on South Georgia was limited only by physical barriers - the sea and large areas of permanent ice. With global climate change, however, glaciers on South Georgia are in rapid retreat, so areas of the island once protected from rats were being over-run. Even islands still free of rats were unlikely to retain their status. One such - Saddle Island - was invaded between 24 and 9 years ago after being immune for two centuries, and others were likely to follow when rats were conveyed on a mat of vegetation, or were transported to a remote shore by the sea. For this reason, the current project was seen as the last chance to eradicate rats before they swept over the entire island and became impossible to remove.

Not only was this the world's largest attempted invasive rodent eradication, but it attracted attention for being the first on anything like this scale to be carried out by a relatively small NGO, and mostly with private finance. If this substantial challenge could be overcome, the hope and expectation was that other NGOs may be encouraged and inspired to consider freeing other islands of invasive species, thereby providing much needed additional global capacity in this field of nature conservation.

Figure 1. Map showing location of South Georgia

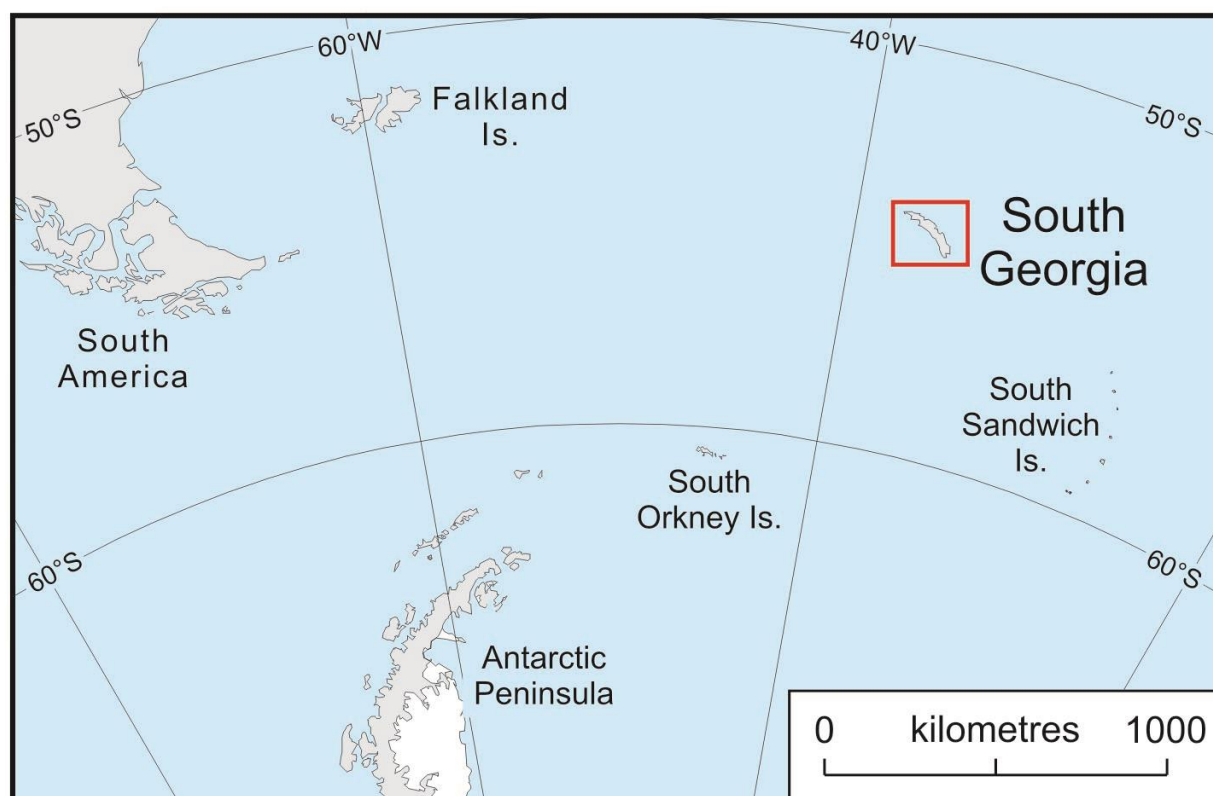
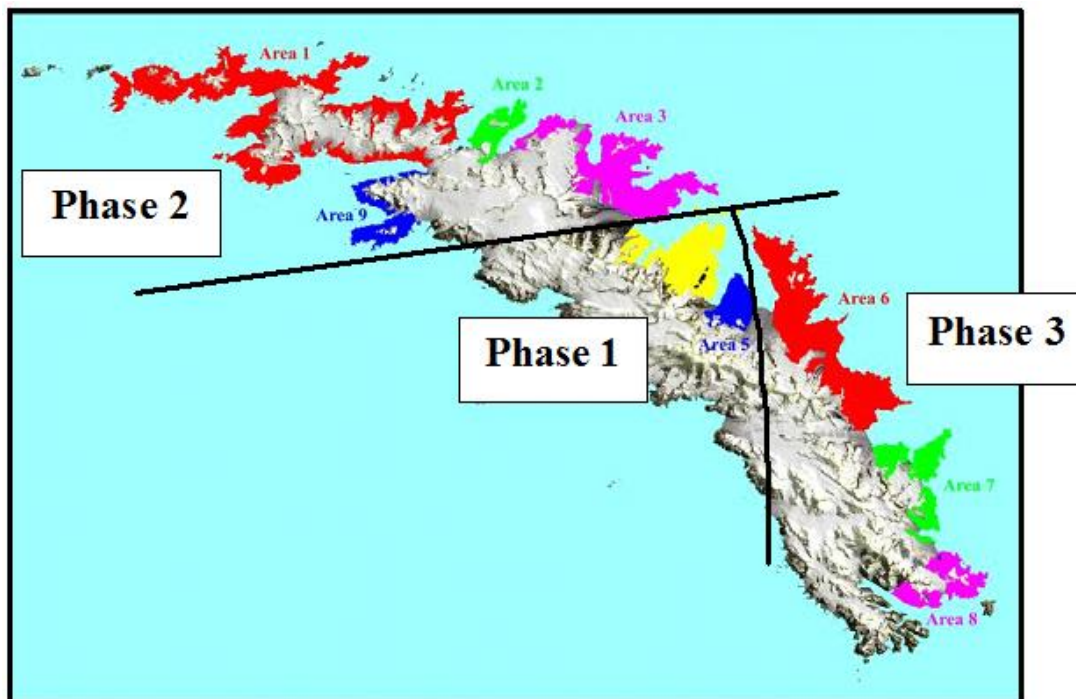


Figure 2. Map of South Georgia, showing the land treated for rodents in each operational phase of the Habitat Restoration project. The Darwin Plus award supported the Phase 3 campaign.



2 Project Achievements

2.1 Outcome

Outcome:	South Georgia will be free of rodents for the first time since shortly after discovery in 1775, and the otherwise inevitable spread of rats to currently rat-free offshore islands, the last refuge of endemic pipits and many small seabird species, will be prevented. Rodent-inflicted damage to the island's native flora and fauna will cease; five ACAP-listed breeding species and many other vulnerable birds will be protected. Rodent eradication programmes on other UK Overseas Territories and beyond will be informed by the South Georgia operation, which represents a landmark in the global race against invasive alien species.		
	Baseline	Change by 2016	Source of evidence
Indicators	Rodents evident in Phase 3 zones.	No sign of live rodents since the baiting work was completed.	Observations by tens of BAS staff and thousands of visitors on cruise vessels, all of whom were aware of the recent rodent eradication effort and the need to look for rat sign
<i>NB. We were not asked to provide indicators for our Outcome in the application form. In retrospect, some of the components from the Outputs table (Outputs 2 and 4 baseline and changes,</i>	No breeding South Georgia Pipits in	Immediate impact on native fauna, as	Anecdotal, but voluminous and

<p><i>below) perhaps work better here.</i></p> <p>Evidence of breeding endemic South Georgia Pipits is one of the best indicators of the absence of rodents – the species is our “canary in a coal-mine”.</p>	<p>Phase 3 area.</p>	<p>evidenced by the first breeding of the endemic South Georgia Pipit (multiple nests at multiple sites) in living memory.</p>	<p>geographically widespread, reports from tourists, tour staff and BAS staff of pipit sightings, e.g. Annex 5 of this report</p>
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Although it is too early to say definitively, all indications to date are consistent with the project having eradicated rats. The impact of that, i.e. the recovery of South Georgia's terrestrial ecology, fauna and flora, has started. But it will take decades, perhaps centuries, before a new post-rodent equilibrium occurs.

The early evidence of impact was in the form of a sudden and dramatic breeding range expansion of the one bird species on the island that can achieve that - the endemic pipit. Unlike the vast majority of birds on South Georgia, pipits breed at age 1, disperse from their natal territory, have clutches of 4 or 5 eggs and may raise more than one brood per season. In theory they can multiply quickly and colonise large new areas of suitable habitat. It appears that this is exactly what has occurred. Habitat that had been off limits to pipits for more than a century was, within a year, full of pipit song and subsequently pipit nests.

In contrast, most of the seabirds mature at ages of 4 years or more, lay one egg per season and return close to the site where they themselves hatched. Consequently, full population recovery will take a long time, but there are already very encouraging early signs of birds returning to sites cleared of rats in 2011, and there can be little doubt that recovery will be island wide in due course. Crucially, no bird species are known to have been lost altogether from South Georgia, because rodent-free offshore islands acted as sanctuaries. Recovery will therefore happen naturally, albeit slowly. There is no need for further human intervention to relocate birds to the main island.

Rodent eradication programmes on other UK Overseas Territories and beyond will be informed by the South Georgia operation. Already, one of the project staff members has been employed by RSPB as their main advisor for the upcoming Gough Island project.

2.2 Long-term strategic outcome(s)

As the largest rodent eradication campaign ever attempted, this project sets a new benchmark in the fight against damaging alien invasives in the UKOTs, and indeed globally. In the context of South Georgia, the Environmental Management Plan for the Territory (Plan for Progress, British Antarctic Survey, 2006) states that a policy aim is 'to eradicate or control previously introduced species that affect or endanger native species or habitats'. The brown rat, the target of the current project, is undoubtedly the most damaging of all such introduced species. This project also fits within strategic priority ii of the United Kingdom overseas territories biodiversity strategy (DEFRA, 2009): 'preventing the establishment of invasive alien species, and eradicating or controlling species that have already become established'.

If the project has achieved its aim, as currently looks likely, not only will the island's bird fauna reclaim land lost to rats for two centuries, but South Georgia's entire terrestrial ecosystem will slowly return to what it was pre-discovery. The returning seabirds will deliver thousands of tonnes of rich fertiliser to the landscape each year, much of which will be taken up by vegetation. In turn, over time the native tussock grass will generate the formation of peat soils - the substrate into which burrow most of the seabirds that will return as a consequence of rat eradication. The ecological cycle will then have been completed.

Four days after the fieldwork for this project was concluded, the Government of South Georgia and the South Sandwich Islands announced that it had ratified the Convention on Biological Diversity (CBD). The Government's press release announcing this event highlighted the eradication of rodents as significant in this context. Article 8(h) of the CBD states that, "Each contracting Party shall, as far as possible and as appropriate, prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species."

Value for money was conferred by both the scale of the project, resulting in a low cost per unit area treated, and the means by which it was administered. A small NGO has fewer layers of management than a larger body, and less bureaucracy generally. Consequently, the 2013 operation, though covering nearly three times as much ground as did a similar operation on Macquarie Island (which was funded and overseen by State and Federal Governments in Australia), cost less than 25% of that campaign. Similarly, the upcoming mouse eradication on Gough Island is predicted to cost eight times as much per km² treated. The density of bait to be sown on Gough is much higher, and other factors are involved, but still the South Georgia operation was demonstrably very cost effective by any comparison.

2.3 Outputs

Output 1:	Bait spreading in rodent-infested areas of SG completed.			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Indicator 1.1 Comprehensive bait-sowing, with no gaps and at the recommended sowing densities. Complete by end April 2015.	After delivery of phases 1 and 2 of the project in 2011 and 2013, 67% of the rodent infested area of South Georgia had been baited. A further 364km ² of land known to be harbouring rodents remained to be baited.	Comprehensive, gap-free, sowing of bait over all terrain possibly occupied by rodents. Bait was sown at the planned densities and before the deadline.	Evidence provided by the GPS tracks of the aircraft, showing where bait was spread (see Fig. 3 below).	
Output 2.	Assessment of baiting success initiated			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Indicator 2.1: Success will be determined by way of monitoring rodent detection devices. These devices will be deployed one week after baiting has taken place, and as many as possible will be checked before the baiting team	Rats prevalent	No sign of live rodents detected since baiting was completed, despite thousands of person-hours of vigilance.	Observations by tens of BAS staff and thousands of visitors on cruise vessels, all of whom were aware of the recent rodent eradication effort and the need to look for rat sign.	Cannot yet be certain that eradication achieved, but all signs to date are consistent with that scenario. So far, so good! We will carry out a complete survey of all baited areas to look for rodent

leaves the island. Before winter sets in, as many of these devices as possible will be checked by boat from King Edward Point.				sign at the end of 2017.
Output 3.	Non-target mortality assessed.			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Indicator 3.1. Better understanding of impacts of bait sowing on native birds. A report on non-target effects during phase III will be published on GSGSSI and SGHT websites.	The main at risk species have been identified from phase I and II. Inadequate knowledge of the impacts of commencing baiting in mid-February. Need for more information on mortality in sheathbills	Non-target mortality was monitored by a dedicated team employed by GSGSSI for several weeks. Mortality of skuas was high, as expected, but moderate or low in other species. Sheathbill losses were lower than expected. Due to populations of all species, including skuas, being strong elsewhere on the island, the losses due to this phase of baiting are confidently expected to be recovered in less than 5 years.	Data collected by the GSGSSI team. Their report is available from GSGSSI.	
Output 4.	Recovery of endemic flagship bird species evaluated			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Indicator 4.1 Successful completion of line transects in areas treated during Phases 1, 2 and 3 of the rodent eradication operation.	Anecdotal information from opportunistic sightings in 2013 suggest pipit density increased in areas where rats were eradicated in 2011.	Dramatic increase in sightings of pipits in the season after baiting, and the first breeding of pipits in this area in living memory, perhaps a century or more.	Anecdotal, but voluminous and geographically widespread, reports from tourists, tour staff and BAS staff of pipit sightings e.g. Annex 5 of this report	RSPB withdrew from the project, so line transects were not completed. However, non-systematic evidence was incontrovertible.

Output 5.	Dissemination of results and public outreach		Source of evidence	Comments (if necessary)
	Baseline	Change recorded by 2016		
Indicator 5.1 Annual report on project published on SGHT website. 5.2 Press release on completion of baiting. 5.3 At least 10 media articles on the eradication effort and its consequences. 5.4 At least 4 public talks/lectures on the eradication effort and its consequences	Public has little knowledge of South Georgia or the damage caused to native wildlife by introduced rodents. No large-scale rodent eradication has been carried out by any small scale NGO before.	Our target of 10 media articles was met. In addition we received significant online and broadcast coverage, and exceeded our public talks target.	Press release, summary of media coverage and a sample article are presented in Annex 6.	

Output 1 (bait spreading in rodent infested areas of South Georgia) was accomplished successfully, safely and on time. A competent and experienced team of people carried out the work, assisted by the equally skilful and experienced officers and crew of the depot-laying vessel, the RRS *Ernest Shackleton*, chartered from the British Antarctic Survey. The area of land treated, 364 km², was nearly three times the size of largest island cleared of rodents to date globally (Macquarie), but was still confidently manageable in the context of what had been achieved on South Georgia in 2013. The whole of South Georgia has now been treated for rodents.

Figure 3 shows baiting flightlines in the extreme southeast corner of South Georgia - Cooper Bay and Cooper Island (Cooper baiting zone). These lines were flown as part of the Darwin Plus-supported work and are a typical example of how baiting was approached in every part of the island. The internal boundary of the area to be sown with bait was first flown by helicopter, defined on the basis of ice cover and rock surface, and plotted by GPS. Suitable flightlines, providing the required distance between adjacent baiting swathes, were then calculated and entered into the GPS units to guide the pilots. Areas with permanent ice or sheer rock could not harbour rodents, and were therefore excluded. All other areas were treated.

Figure 4 gives an overview of the land targeted by the Phase 3 campaign.

Figure 3. Flight lines over part of the Cooper baiting zone, including Cooper Island.

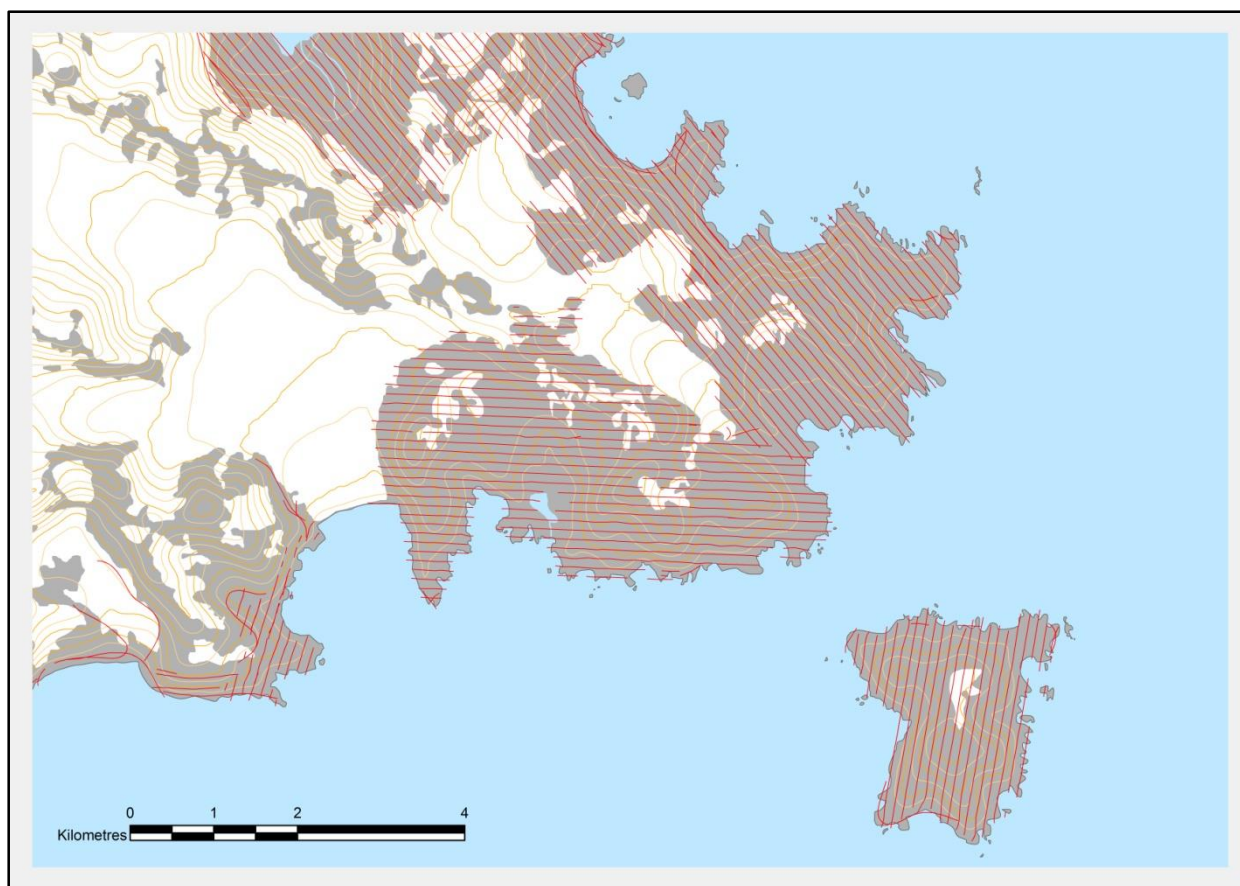
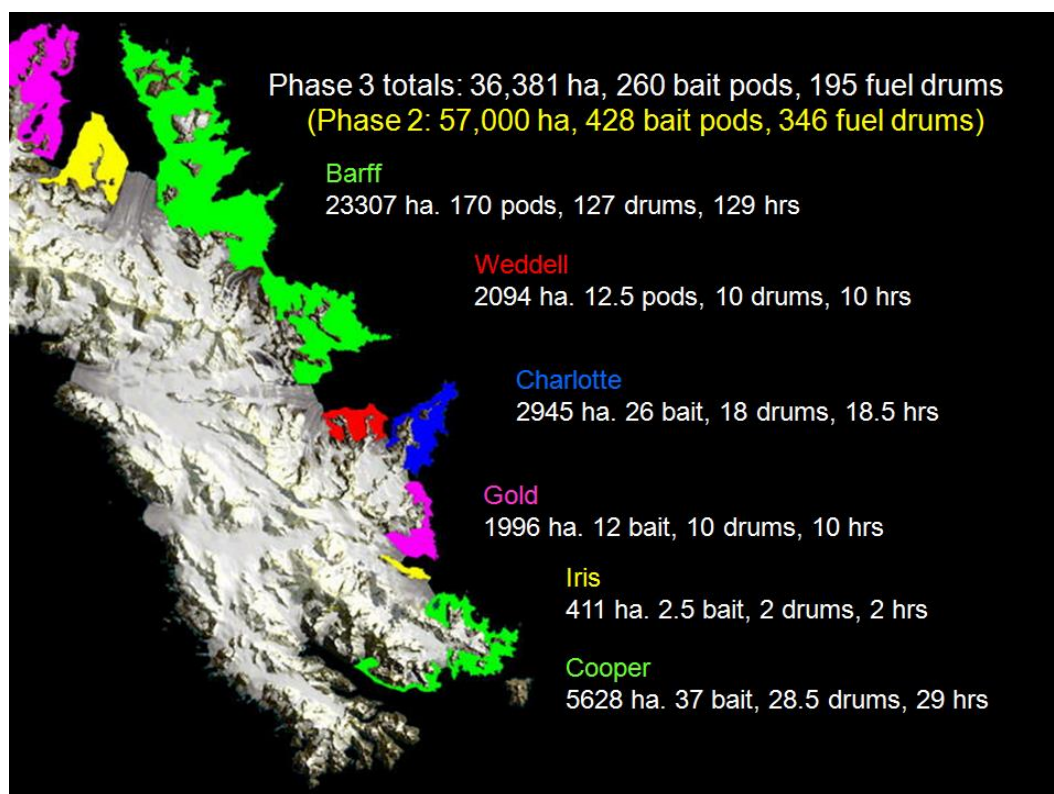


Figure 4. Size of each Phase 3 baiting zone, and the resources required to treat it for rats. Cooper Island was added to the task, at GSGSSI request, at the last moment.



Output 2 “Assessment of baiting success initiated” was not accomplished as originally planned. The deployment and checking of rodent devices in the newly-treated areas did not take place because of the relatively short time between completing baiting and leaving the island (a result of unavoidable weather delays and damage sustained by one of our helicopters, see section 2a below). It was possible that some rodents would not have yet succumbed to the bait in that period, so positive results could have been misleading. However, in the season after baiting, SGHT established a novel and productive relationship with the tour companies such that the many tourists going ashore were briefed on how to look for rodent sign, encouraged to look for it, and asked to photograph and report anything suspicious that they encountered. The initiative was called 'Ratwatch'. Not only did it give us the benefit of thousands of pairs of eyes and thousands of hours of effort, but it greatly raised awareness of the project and the need for vigilance in keeping the island free of rodents.

During much of the baiting period, the South Georgia Government had two people covering the baited areas searching for, recording and burying carcasses of birds that may have succumbed to the bait, directly or indirectly (**Output 3**). They finished their work, and developed a report accordingly. In summary, mortality was much as expected, with Antarctic Skua hardest hit in terms of numbers, though fewer ducks were lost than anticipated. Experience from Phases 1 and 2 of the umbrella project demonstrated that skua numbers should recover to normal within two or three years, and indeed anecdotal reports indicate that numbers of breeding birds were healthy in the season immediately following treatment. This may be due to an influx of birds from other parts of South Georgia, where populations have already recovered after baiting in previous years.

Output 4 was not accomplished because the RSPB was unable to organise the necessary logistics, and indeed then withdrew from the project. This was unfortunate, but in fact the recovery of the flagship endemic South Georgia Pipit is so obvious that sophisticated sampling methodology is not necessary. Whereas pipits were essentially absent from the main island in the breeding season prior to baiting, and were sparse even during post-migratory dispersal, they are now encountered routinely year round. The transformation is extraordinary, as evidenced by the 'pipit log' maintained by SGHT in the South Georgia museum to record sightings by tourists, and by anecdotal reports such as copied in Annex 5 below.

Output 5, the dissemination of results and outreach, was accomplished. The Project Director completed his operational report in May 2015, and a press conference on the project was held in London on 25 June. This generated coverage on BBC Breakfast TV, BBC Radio Scotland, in the national print media (including the Times, the Independent and the Observer), regional newspapers, several magazines and online. The PD lectured on the project in Gibraltar, Paris, Brazil, South Africa, London (twice) and Cambridge (twice). Additionally, some 5,000 visitors to South Georgia during the 2015/16 summer season attended lectures about the project, delivered by SGHT staff on the island.

2.4 Sustainability and Legacy

The main project achievement of rodent eradication will endure in perpetuity as long as new invasions from visiting ships are prevented by effective biosecurity measures implemented by the Government of the Territory. The legacy of the operation will be apparent to every visitor to the island from now onwards. Native wildlife has already started to respond to the absence of rodents, and the recovery of fauna, flora and entire terrestrial ecosystem will continue for decades, if not centuries. One of the key characteristics of this project was that it facilitated natural recovery. The work was carried out in the nick of time, before any species was lost entirely, so regeneration is happening without the need for human intervention.

Most project staff were employed on fixed-term contracts, and these concluded after fieldwork. One has now been employed by RSPB as the lead advisor on the upcoming Gough Island mouse eradication project in the S Atlantic. Equipment (NB. not funded by Darwin) has now mostly been sold. The Project Director and a small number of key staff have been retained for a limited period, some part-time, to dispose of equipment, write reports and papers, and plan a survey in late 2017 to determine whether eradication has been achieved or not.

3 Project Stakeholders/Partners

Active and enthusiastic engagement with stakeholders, primarily the Territory Government (GSGSSI), the British Antarctic Survey (BAS) and tour ship operators, was of huge importance to this project and was maintained throughout. GSGSSI and BAS were represented on the project's Steering Committee, and in this way were both closely informed and involved in all major decisions. The Committee met four times per year throughout. Project staff were accommodated in the field at the King Edward Point research and administrative base, which is owned by GSGSSI and operated by the BAS. During the field deployment, briefing meetings were held by the Project Director every day and were always attended by BAS and GSGSSI staff.

Tour operators were informed about the project before the season commenced, and each ship was offered an illustrated presentation about the work. Most accepted. In addition, the island museum, which has displays about the project and is run by SGHT, is visited by almost every tourist. Few of the 8,000 visitors to South Georgia during the 2014/15 season, or indeed the seasons either side, could have not been well aware and well informed of this work and the support it received from the Darwin Initiative. Thousands of visitors joined the Darwin Initiative in providing finance for the work to be carried out, and so were stakeholders in a very real sense.

The BAS logistics ship, *RRS Ernest Shackleton*, was chartered for the depot-laying work. This collaboration, continued from the 2013 Phase 2 operation, worked exceedingly well and resulted in even closer ties between BAS and the project.

The FCO was kept informed about the project throughout, both through GSGSSI and SGHT. FCO representatives attended the function in the House of Lords to celebrate the conclusion of the project and the launch of the associated book (*Reclaiming South Georgia*) in October 2015.

4 Lessons learned

This project was based on earlier, similar, fieldwork on South Georgia and consequently was planned with the benefit of considerable experience. By far the biggest lesson learned, or confirmed, in 2015 was the importance of contingency planning. A violent storm damaged two of our helicopters on the ground to the extent that one could not be flown again during the season, and this occurred before baiting had even commenced. The operation needed two flyable helicopters in order to satisfy permitting requirements and to provide mutual SAR cover, so this storm event would have brought the project to an instant and permanent halt had SGHT not bought a third aircraft to cope with exactly this type of unpredictable and expected accident.

The assessment, minimisation and management of risks were crucial elements of planning for this project, as they must be for any that cannot quickly replace damaged or lost equipment and supplies, or indeed key personnel. The helicopter was by far the largest, most complex and most expensive piece of equipment to suddenly become unavailable in this or any previous season, but the project was as strong as its weakest link, and numerous pieces of equipment (and people) were equally fundamental to project success. Risk assessment and management necessarily included tough decisions on how much money could and should be spent on insurance - not only in the sense of financial recompense but, more importantly from a strategic perspective, in the sense of buying, transporting and holding spares of key resources. In the case of the 2015 season, the largest 'spare' was a helicopter that cost ~£300k. This was a very substantial commitment of scarce funds, but cheap compared to the cost of not buying the aircraft and having to abandon an entire season of work (£millions).

The other overarching lesson was the crucial role played by the Steering Committee. By inviting key stakeholders to be involved in the oversight of the project, *its* success became *their* success, and we are confident that this led to easier working relationships than would otherwise have been the case. Certainly, the territory Government was always perceived to be extremely vigilant and demanding in terms of documentation, permitting and day-to-day monitoring, but at least its staff knew that nothing was hidden. Project management and decision making was transparent and open from the start.

4.1 Monitoring and evaluation

Fortunately, no major changes to project design were required. Once again, lessons learned from previous seasons of work were invaluable, allowing us to deal effectively with unforeseen problems (like the damage to two helicopters and the operational loss of one of them).

The M&E system in place was effective, and included project oversight not only by SGHT Trustees but also independent stakeholders through the Steering Committee. Improvements in any element of the project proposed by stakeholders, whether through the Steering Committee or not, were implemented rapidly. This responsiveness helped greatly in creating positive and constructive relationships.

4.2 Actions taken in response to annual report reviews

N/a as this is a one-year grant.

5 Darwin Identity

The Darwin Initiative logo was prominently displayed on SGHT's helicopters (see Fig. 5), and images of them are universally used both in presentations about the work and in publicity material. The Darwin Initiative funding has been publicised on SGHT's web site <http://www.sght.org/latest-news-page>, and is prominently (and proudly) acknowledged in talks and interviews.

This Darwin Plus award formed part of the funding for the project.

The Darwin Initiative is now widely known in conservation circles, and to have won an award is recognised as a mark of esteem, so there is advantage to SGHT in publicising the fact that this project is supported by the Darwin Initiative. SGHT does have a Twitter account, and this is indeed linked back to the Darwin account.

There are no permanent residents on South Georgia, but the island's Government is very aware of the Darwin Initiative both as a partner in this and other projects and as Lead Institution for a Darwin Plus award relating to the management of invasive plants.

Figure 5. Darwin logo on helicopter Alpha Sierra



6 Finance and administration

6.1 Project expenditure

Project spend (indicative) since last annual report	2015/16 Grant (£)	2015/16 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs			-9.1%	
Consultancy costs				
Overhead Costs				
Travel and subsistence			-27.3%	The £3,000 underspend relates to the budget for RSPB flights which were not used after RSPB withdrew from the project.
Operating Costs			+3.4%	
Capital items				
Others				
TOTAL (without end of project audit fee)	248,283	241,600	-2.9%	

Staff employed (Name and position)	Cost (£)
Oli Prince - Catering Manager	
Jerome Viard - Chef/Bait handler	
George Lemann - Environmental Officer	
Roger Stilwell - Bait loader/General Assistant	
Richard Hall - Bait loader/General Assistant	
EIA adviser - Liz Pasteur	
Keith Springer - Baiting Operations Manager	
James Doube – Medic	
TOTAL	£89,647

Consultancy – description of breakdown of costs	Other items – cost (£)
n/a	
TOTAL	

Capital items – description	Capital items – cost (£)
n/a	
TOTAL	

Other items – description	Other items – cost (£)
n/a	
TOTAL	

6.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Schroder Foundation	
John Ellerman Foundation	
Rieber Shipping	
Wallace Research Foundation	
Lyda Hill	
Garfield Weston Foundation	
Island Foundation	
Weeden Foundation	
Leona M and Harry Helmsley Foundation	
Anonymous US foundation	
GSGSSI in-kind contribution	
TOTAL	734,600

Source of funding for additional work after project lifetime	Total (£)
Schroder Foundation 2016	
Individuals	
Other UK trusts	
US Foundations	
Lyda Hill Foundation	
TOTAL	300,000

In addition we have recently been awarded a new Darwin Plus grant for the next project phase (survey expedition) totalling £87,000 over two years. This is not included in total 23 of Annex 1 or in the tables above.

6.3 Value for Money

In terms of conservation returns on pounds invested, the potential rewards of this project are exceptionally high. Compared to similar operations elsewhere (e.g. on Campbell Island and Macquarie Island, and the projected cost of the forthcoming Gough Island project), this project offered very good value for money (see 2.2 above). Cost efficiency was partly due to the huge scale of the operation, but also to the fact that it was run by a small charity. Previous eradications on anything like this scale have always been administered by Governments or large NGOs. Inevitably, their management structure is multi-layered, more complex and more expensive.

In this context, it is important to emphasise that in keeping costs to a minimum no corners were cut in terms of Health and Safety or adherence to legislation. Safety was always the highest priority. The aircraft were flown on the UK CAA register and were both operated and maintained to the highest standards of the relevant authority, EASA (European Aviation Safety Agency). The pilots employed were the best in the world in this field. During more than 1,000 hours of flying over rough terrain and in often very rough weather, not one forced- or emergency-landing occurred. H&S risk assessments were completed for all activities to UK standards, and full appropriate PPE was always worn, again to current UK standards. No life-threatening accidents occurred, and injuries were minor. The team included a fully qualified specialist in emergency medicine, but thankfully his skills were not required.

Annex 1 Standard Measures

Code	Description	Totals (plus additional detail as required)
Training Measures		
1	Number of (i) students from the UKOTs; and (ii) other students to receive training (including PhD, masters and other training and receiving a qualification or certificate)	
2	Number of (i) people in UKOTs; and (ii) other people receiving other forms of long-term (>1yr) training not leading to formal qualification	
3a	Number of (i) people in UKOTs; and (ii) other people receiving other forms of short-term education/training (i.e. not categories 1-5 above)	(i) 1, (ii) 35
3b	Number of training weeks(i) in UKOTs; (ii) outside UKOTs not leading to formal qualification	(i) 20, (ii) 5
4	Number of types of training materials produced. Were these materials made available for use by UKOTs?	3, NO
5	Number of UKOT citizens who have increased capacity to manage natural resources as a result of the project	1
Research Measures		
9	Number of species/habitat management plans/ strategies (or action plans) produced for/by Governments, public authorities or other implementing agencies in the UKOTs	
10	Number of formal documents produced to assist work in UKOTs related to species identification, classification and recording.	
11a	Number of papers published or accepted for publication in peer reviewed journals written by (i) UKOT authors; and (ii) other authors	
11b	Number of papers published or accepted for publication elsewhere written by (i) UKOT authors; and (ii) other authors	
12b	Number of computer-based databases enhanced (containing species/genetic information). Were these databases made available for use by UKOTs?	
13a	Number of species reference collections established. Were these collections handed over to UKOTs?	
13b	Number of species reference collections enhanced. Were these collections handed over to UKOTs?	

Code	Description	Totals (plus additional detail as required)
Dissemination Measures		
14a	Number of conferences/seminars/workshops/stakeholder meetings organised to present/disseminate findings from UKOT's Darwin project work	1
14b	Number of conferences/seminars/workshops/stakeholder meetings attended at which findings from the Darwin Plus project work will be presented/ disseminated	2
Physical Measures		
20	Estimated value (£s) of physical assets handed over to UKOT(s)	
21	Number of permanent educational/training/research facilities or organisation established in UKOTs	
22	Number of permanent field plots established in UKOTs	
23	Value of resources raised from other sources (e.g., in addition to Darwin funding) for project work	£1,034,600

Annex 2 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. weblink, contact address, annex etc)
Book	'Reclaiming South Georgia', author Tony Martin, 2015	UK	UK	M	South Georgia Heritage Trust, Dundee	SGHT or Natural History Book Service, UK

Annex 3 Darwin Contacts

Ref No	DPLUS031
Project Title	South Georgia Habitat Restoration Project: Final Phase
Project Leader Details	
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Fax/Skype	
Email	
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Role within Darwin Project	Partner
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