Darwin Plus:
Overseas Territories Environment and Climate Fund
Annual Report

Submission Deadline: 30th April 2017

Darwin Plus Project Information

Project reference	DPLUS048
Project title	South Georgia Habitat Restoration Project: Post-Baiting Phase
Territory(ies)	South Georgia and the South Sandwich Islands
Contract holder institution	South Georgia Heritage Trust (SGHT)
Partner institutions	n/a
Grant value	Total £87,000 (year 1 £45,000, year 2 £42,000)
Start/end date of project	April 2016/ March 2018
Reporting period (e.g., Apr 2016-Mar 2017) and number (e.g., AR 1,2)	Apr 2016-Mar 2017 AR1
Project leader name	Richard Hall
Project website/blog/Twitter	www.sght.org www.facebook.com/pages/South-Georgia-Heritage-Trust/107047869335869 https://twitter.com/SGHTcharitysite
Report author(s) and date	Stephanie Strutt, Richard Hall, April 2017

1. Project overview

Globally, invasive alien species (IAS) are second only to habitat loss in reducing biodiversity. This impact is especially pronounced on islands, and many UKOTs have consequently lost endemic fauna. South Georgia was invaded by rats and mice soon after discovery in 1775, and they subsequently spread, destroying native wildlife and leaving many bird species confined to small offshore islands. Over three seasons ending in 2015, rodent eradication was attempted on South Georgia. Evidence to date indicates that the effort was successful, but a comprehensive survey is needed before South Georgia can be declared rodent-free and treated as such. The current project, covering the post-baiting phase of eradication effort, is centred around the preparation and delivery of that survey work. The survey expedition will take place November 2017- April 2018.

*NB The original proposal comprised two elements, the survey and an international conference. The conference, entitled "*Island Invasives 2017: Scaling up to Meet the Challenge*", will be the third in a series of international conferences focused on invasive alien species on islands, their impact and management. The Dundee conference will be the first such meeting for seven years, and the first to be held in the northern hemisphere.The Darwin Committee decided not to support the conference with this Darwin Plus grant and consequently we were advised by LTS that there is no requirement to report against the components of the proposal relating to the conference. However, for general interest, progress with the conference is briefly mentioned in the relevant sections below.*

Figure 1. Map showing location of South Georgia

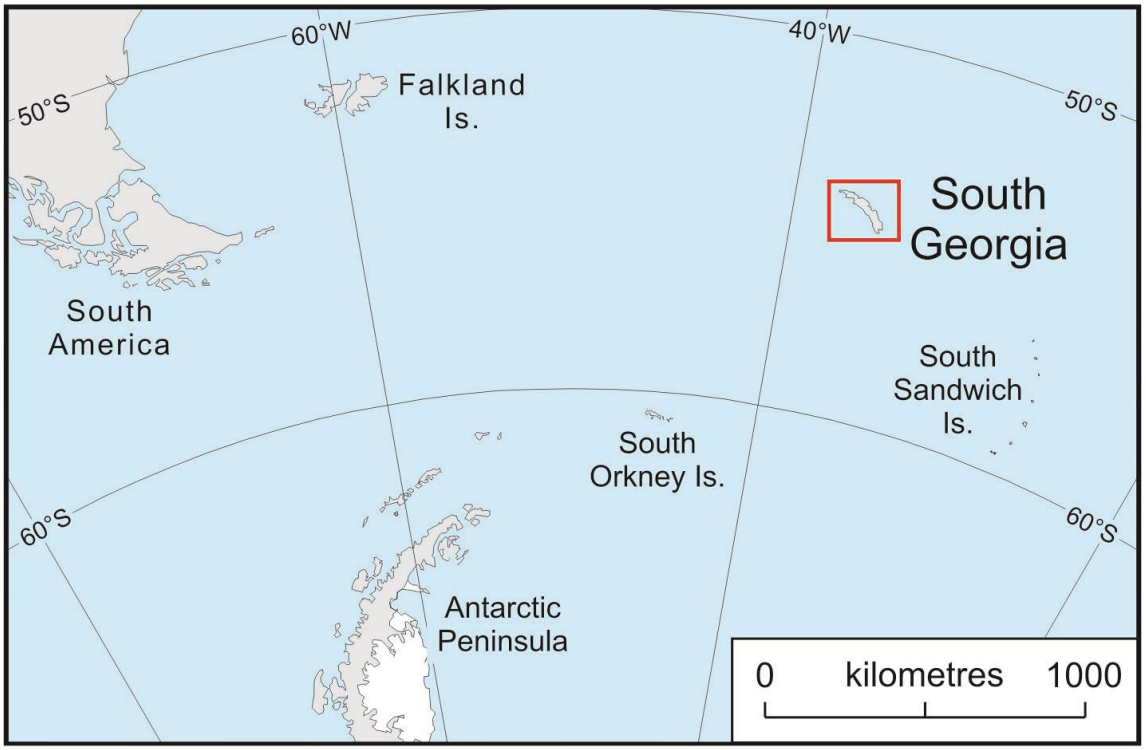
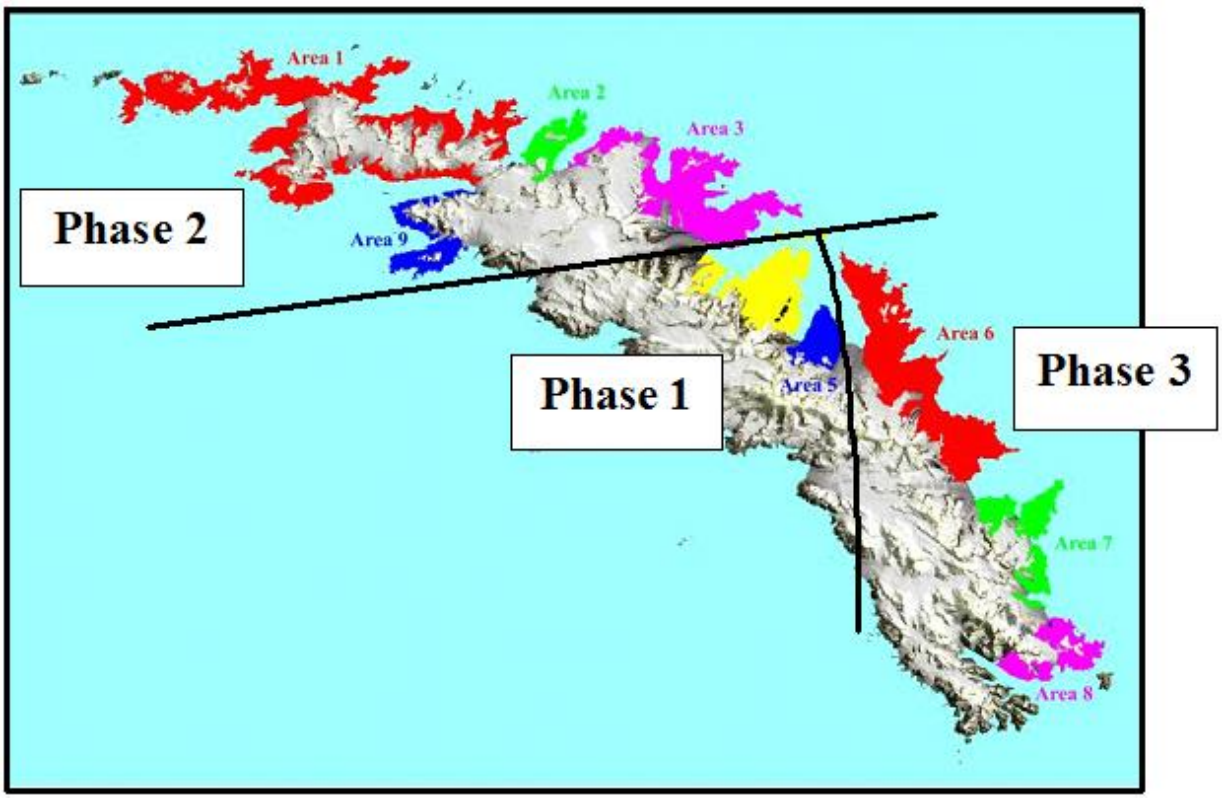


Figure 2. Map of South Georgia, showing the land treated for rodents in each operational phase of the Habitat Restoration project. The monitoring survey will focus on Phase 2 and Phase 3 areas (Phase 1, the trial phase area treated in 2011, has already been surveyed and declared rodent-free.



2. Project stakeholders/partners

(a) Government of South Georgia and the South Sandwich Islands (GSGSSI) has been closely involved in the planning and logistical support of previous phases of SGHT's Habitat Restoration Project on South Georgia. In recent months we have liaised with GSGSSI over the scope and design of the survey, providing them with an EIA and Operational Plan for review and discussing the detail of sites to be visited. GSGSSI is providing its Fishery Patrol Vessel, the MV *Pharos* to deploy monitoring devices in November/December 2017 (see section 3.1 below). We continue to work with the government on permitting issues, and to agree details of the movements of the field team and dogs. We are also in regular discussion with them to encourage increased biosecurity measures to ensure the legacy of the project going forward (see q.8).

(b) South Georgia's tour operators and tourists have also been closely involved throughout the earlier phases of the Habitat Restoration project. We have consulted the operators at their annual meetings (International Association of Antarctic Tour Operators), liaised with them about potential impacts on their operations and directly addressed the majority of the clients at South Georgia in recent years. During the past season, visiting cruise ship passengers have responded enthusiastically to our presentations and to the already evident signs of wildlife recovery and have continued to donate towards the ongoing work of the Habitat Restoration Project.

(c) British Antarctic Survey (BAS) board members serve on the Steering Committee for the Habitat Restoration Project. SGHT and BAS are liaising over the accommodation of the team and dogs on the island during the survey work. BAS runs South Georgia's logistical base at King Edward Point, which will serve as the monitoring expedition's accommodation base (though the majority of the time that the field teams spend on South Georgia they will be camping or on board vessels). BAS is supporting the survey with an offer of logistical capacity on board the RRS *Ernest Shackleton* and *James Clarke Ross* during their resupply visits to King Edward Point during the monitoring season.

3. Project Progress

4. Progress in carrying out project Activities

Activities to deliver Output 1

Our survey expedition to ensure that no rodents have survived is planned for the austral summer season from November 2017 to April 2018. The first year of the grant has been all about planning and preparation.

Of the activities listed under Output 1, only those under 1.1 fall within the first year of the grant. As reported in our six-month report, excellent progress has been made in preparing for the field work and we remain on schedule.

Expert advice on the methodology of the survey was sought and received from the Island Eradication Advisory Group (IEAG) and others. To ensure a robust survey we need to spread search effort as evenly as possible, and at each landing site to focus on habitat that is most likely to be attractive to rodents, including bird colonies, coastal tussac and, where they occur, whaling station buildings.

To maximise our chances of detecting any remaining rodents, we plan to use a combination of passive rodent detection devices (in the form of flavoured chew sticks, chew boards, wax tags, tracking tunnels and automatic camera traps) and highly trained rodent surveillance dogs. Dogs have proved highly effective in other island eradication programmes, such as that on Macquarie Island. They are rigorously trained to ignore noise and smells of the native wildlife and to focus solely on their target scent. Each wears a GPS collar so that its movements can be accurately tracked. Two New Zealand-based dog handlers and their three trained rodent dogs have been selected for the expedition. The three small terriers are fast, nimble and tenacious, all important

qualities for rodent surveillance dogs. The dogs will be deployed at the beginning of 2018 and will be on the island until April 2018.

An update on the vessels to be used in the survey expedition

When we originally submitted our application our planning for the survey was still in the early stages. At that time we envisaged that we would charter one yacht which would make two separate voyages, each of about six or seven weeks (the first, in December 2017, to deploy monitoring devices in all the Phase 2 and 3 zones, and the second, in February 2018, to collect them).

Since that time our plans have been revised and expanded. The survey now involves a total of three vessels, but at no additional cost, thanks in part to the generosity of the South Georgia Government, which is allowing our team to make use of its fishery patrol vessel for device deployment, and to the owners of a smaller support yacht, who are offering its use in return for a very reasonable stipend.

In order to make the most of the vessel time available, a ground team of four has been added to the operation to work in parallel with the MV *Pharos* to deploy devices in November/December 2017 and with the *Hans Hansson* in March/April 2018 to retrieve them. This will mean the vessels will have more time to cover more remote areas. The team will be based at King Edward Point Research Station and will be able to access huge areas of important habitat.

The following vessels will now be involved.

1. MV *Pharos SG*

The *Pharos SG* is commissioned by GSGSSI as a fishery patrol vessel. She enforces fisheries licensing and conducts compliance inspections. GSGSSI has agreed that we may use the *Pharos SG* for the first stage of the survey expedition to deploy rodent detection devices, essentially offering its use and some of their staff time as a contribution in kind. We are providing a field team to work aboard the vessel. The *Pharos* will be deploying devices from early-November until mid-December 2017.

2. The *Hans Hansson*

This was our first choice of vessel for the main charter, and we are delighted to have been able to secure her and her very capable and experienced skipper for 42 days between February 24th 2018 and April 7th 2018. This is the period when the passive devices will be retrieved and the dog handlers will undertake the bulk of their work. The *Hans Hansson* was originally built in Norway in 1960 for the Norwegian Lifeboat Association before being transferred into private ownership. She has outstanding seakeeping abilities and an ice-strengthened hull makes her ideal for polar regions. We have worked with skipper Dion Poncet in previous phases of the Habitat Restoration Project. He has a wealth of experience skippering expeditions in the waters around South Georgia http://www.goldenfleecexp.co.fk/english/poncet_en.html

3. *Wanderer III*

Wanderer III was made famous by Eric and Susan Hiscock during two circumnavigations in the 1950's.Wanderer III will act as a support yacht, enhancing our ability to deploy equipment to remote survey sites. In particular, it will help with gap filling if there are sites that are not accessible by the larger vessels. The exactly number of weeks support by the Wanderer III is still being negotiated but currently we are anticipating 14 weeks. There is no charge for the hire of *Wanderer III*, only a stipend for the crew.

Meanwhile, team selections for the fieldwork are underway. An Operational Plan and an Environmental Impact Assessment for the dog work has been written and submitted to GSGSSI for review. The process of selecting survey sites with Government is underway, with a view to covering as much ground as possible. Equipment procurement is also underway, including monitoring devices and equipment, as well as communications and other equipment to keep our staff safe.

Activities to Deliver Output 2.

Output 2 related to the international conference which SGHT is delivering in July 2017 in partnership with the University of Dundee, This was not ultimately funded by Darwin, but is going ahead and a brief update is included here for interest.

Planning for the conference in on schedule, and international interest is as high as expected. As reported in our six month report, the venue has been booked (Dalhousie Building, University of Dundee), a conference website has been set up (www.islandinvasives2017.com), and the registration, call for papers, abstract submission and accommodation portal were all launched according to plan. The Conference Advisory Group, Scientific Chair and Local Organiser have been appointed, the schedule of events agreed and advertised and a professional conference organising company appointed for some elements of the work.

We are delighted that seven of the world's foremost specialists in their respective fields have consented to present keynote talks at the conference, and that The Rt Hon. Lord Gardiner, Parliamentary Under-Secretary of State to DEFRA, has indicated that he would like to attend and talk on HMG's recent commitment to finance IAS management, including biosecurity, in the UKOTs. Hon .Maggie Barry, Minister of Conservation in the New Zealand Government, has also indicated an interest in attending the meeting and talking about her country's IAS initiatives,

To date c. 200 attendees have registered. 180 abstracts have been reviewed and scored by at least two people, and two different versions of a draft programme of oral presentations have been sent to the Programme Committee for consideration.

Sponsorship and under-writing commitments have been secured.

4.1 Progress towards project Outputs

Progress towards Output 1 ("Evidence gathered to confirm whether earlier baiting phases have succeeded in eradicating rodents from South Georgia")."

The baseline condition remains "Success of the rodent eradication campaign is unknown. Consequently SG cannot be declared rodent free and managed as such". There is, however, strong anecdotal evidence that the eradication project has been at least partly successful as reports come back from visitors around the island of high numbers of pipits and pintail ducks along with evidence of breeding and fledging success in previously rat infested areas.

Good progress has been made towards delivering our output in this preparatory year but we will not be able to assess success against our output indicators until after the survey is complete. Since the project design has now been enhanced by the use of dogs we would add an additional indicator: "Use of combined detection methods as per internationally-recognised best practice with a combination of passive and active surveys implemented in each zone including; dogs, passive detection devices, and survey by fieldworkers".

Progress towards Output 2.

As explained earlier, the conference is not something that we are formally required to report on However, the conference preparations are going well and we now have approximately 200 registered attendees towards our original target indicator of 250. At least four are from UKOTs (original target indicator was 5).

4.2 Progress towards the project Outcome

This project has been designed to determine whether the attempted invasive rodent eradication on South Georgia has been a success. Its design builds upon experience and knowledge of other island eradication projects. At present there are strong indications that the eradication has been successful with anecdotal evidence of South Georgia Pipits and Pintails being sighted in ever greater numbers in areas where they had never, or only rarely, been seen. But success can only be confirmed once a whole island survey has been carried out.

If this survey finds no evidence of extant rodents then the eradication can be deemed a success and future management of the island can be based around a rat-free habitat. Such an outcome will also increase confidence in large-scale invasive rodent eradication techniques and inspire others to consider what might be achievable on other islands.

Conversely, should surviving rodents be discovered, then the evidence collected will help advise and inform future management decisions in discussion with GSGSSI.

4.3 Project support to environmental and/or climate outcomes in the UKOTs

As this essentially been a year of planning and preparation for our forthcoming survey expedition it is difficult to provide evidence for specific support to environment/climate outcomes in the UKOTs in past year. However, the wider South Georgia Habitat Restoration project, of which this forms an important part, contributes to

a) the Environmental Management Plan for the Territory (Plan for Progress, British Antarctic Survey, 2006, which states that a policy aim is 'to eradicate or control previously introduced species that affect or endanger native species or habitats'. The brown rat is undoubtedly the most damaging of all such introduced species.

b) 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'.

c) delivering the GSGSSI's obligations under the Convention on Biological Diversity (CBD). 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."

As there is no permanent population on South Georgia we are not able to build capacity among the local population to manage environmental assets. However, we are working closely with the territory government, in particular encouraging and offering support for the implementation by GSGSSI of best practice biosecurity measures on South Georgia, to ensure that the project's legacy endures.

4.4 Monitoring of assumptions

The risks detailed in the original RA table associated with the yacht based survey still hold true to current assessments.

As we have learned in previous seasons, bad weather is a constant risk on South Georgia. Although it is difficult to mitigate for, a flexible approach and having several contingencies have reduced the risk somewhat, along with the option to extend the yacht charter at the end of the season. An experienced and knowledgeable skipper has also acted to reduce the risk in this area.

Health and Safety will be an ongoing issue throughout the project; this risk will be mitigated through training, dynamic risk assessments, daily toolbox talks, PPE and emergency equipment and scheduled down time to allow recuperation of staff. Additionally recruitment of experienced personnel will reduce this risk further.

Turnover of staff for other reasons such as personal circumstances, illness, etc., will be an ongoing risk. Having sufficient staff to absorb additional workload should a team member leave will mitigate much of this risk, as will the careful recruitment of personnel. On a very practical level, to ensure that any replacement of field staff during the monitoring phase does not result in a loss of knowledge of areas in which detection devices we will ensure that staff are working in pairs - so potentially the team could absorb a 50% attrition rate and still retain one experienced staff member in each pair.

With the addition of dogs to the survey there are additional risks in terms of project delivery. These have been minimised as follows:

The handlers are very familiar with the challenges of operating dogs on remote and sub-Antarctic islands, and will be equipped with the necessary veterinary equipment and drugs to sustain a field deployment for this period of time (which is short compared to, for example, the Macquarie Island project). A third dog has been added to the complement in order to provide a contingency in case of illness, lameness or fatigue. The handlers will each be trained and certified to run all three dogs. The handlers will have a stock of frozen laboratory rats and mice aboard the vessel to allow periodic reinforcement training.

The potential environmental impacts of the dogs, and the relevant mitigation factors, are set out at length in the Phase 4 Environmental Impact Assessment (see Annex 3).

5. Monitoring and evaluation

Day to day monitoring of project planning and preparations is undertaken by the Project Leader, whose logistics chart to summarise key logistical milestones is supplied in Annex 4. Our M&E system includes project oversight not only by SGHT Trustees but also independent stakeholders through the project Steering Committee.

The Project Leader and Steering Committee have sought and received advice throughout on best practice in conducting surveys which has been used to refine the project design.

Budget monitoring is overseen by the Chief Executive and the Board of Trustees. For any change in the budget exceeding 5% of budget total the CEO is required to seek approval from the Habitat Restoration Project Steering Committee.

6. Lessons learnt

The work is progressing well and no major issues have so far been encountered.

Staff turnover (one due to role change and another due to illness) has provided some continuity challenges over the year. However, with a new Project Leader Richard Hall (formerly Deputy Project Director) now in place to provide a single point of contact and oversee logistics and recruitment, the remaining preparations of staffing, materials and planning will be completed over the northern summer.

At present it is too early to build upon the learning points from this project. Once completed it will be possible to fully gauge the successes and difficulties and these can be included in a full end of project report which can be used as reference for others undertaking similar projects.

7. Actions taken in response to previous reviews (if applicable)

N/a as this is the first year of the grant.

8. Other comments on progress not covered elsewhere

Enhancements to Project Design

Several significant changes have been made to the original project plan which will benefit the effectiveness of the rodent detection. The first and most important such change is that the search for surviving rodents will now be augmented by the use of specialist 'sniffer' dogs - trained to detect rodents. These dogs and their handlers/trainers are from New Zealand, where such dogs are commonly used for this purpose. They will greatly add robustness to the conclusion that South Georgia is now free of rodents, if indeed no evidence of them is discovered during the survey. The deployment and collection of inert devices will continue as originally planned.

The second change is that the survey of a large chunk of land near the island's permanent base, the Barff Peninsula, is to be carried out by a team based on land rather than on the charter boat. There are two substantial advantages in this. Firstly, the Barff survey will be less vulnerable to poor weather. Secondly, the ground-based work will be in addition to the boat-based survey, so survey effort can be increased. The cost of supporting a team on land is a small fraction of what would be needed if they were boat-based, so the additional cost is modest and affordable.

In addition to the charter of the *Hans Hansson* we now have support from two additional vessels during the early part of the project for the purposes of device deployment (FPV *Pharos* and Yacht *Wanderer III*). These vessels will transport deployment teams around the island, working in conjunction with the ground based teams to ensure full coverage of rodent habitat on South Georgia with the detection devices.

Staff changes

The original project leader (Tony Martin) has now left the Habitat Restoration Project to focus on the conference preparations and been replaced by Richard Hall. Richard was Deputy Project Director when we applied for this Darwin Plus grant and his CV was supplied with the original application. A formal change request seeking approval for this change is supplied along with this report.

9. Sustainability and legacy

We plan to ensure a sustained legacy in two main ways.

- SGHT is encouraging the South Georgia Government to implement best practice biosecurity measures for South Georgia and has offered fundraising assistance to help achieve this.
- SGHT hopes to facilitate studies of post-eradication wildlife recovery working in conjunction with Government. There is growing scientific interest in monitoring the wildlife recovery on South Georgia, following on from recent surveys of pipit numbers.

10. Darwin identity

The Darwin Initiative logo was prominently displayed on SGHT's helicopters during previous phases of the project and images of them are universally used both in presentations about the work and in publicity material. Although the helicopters will not be involved in the survey in 2017/18 we will find other ways to display the Darwin logo during the fieldwork. One option that we are exploring is the possibility of branding jackets for the team and for the rodent surveillance dogs to wear during the fieldwork.

The Darwin Initiative funding has been publicised on SGHT's web site http://www.sght.org/latest-news-page, and is acknowledged in talks and interviews.

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.

11. Project Expenditure

Table 1: Project expenditure <u>during the reporting period</u> (1 April 2016 – 31 March 2017)

Project spend (indicative) in this financial year	**2016/17 D+ Grant (£)**	**2016/17 Total actual D+ Costs (£)**	**Variance %**	**Comments (please explain significant variances)**
Staff costs				SGHT expenditure on the monitoring survey has required a greater proportion of our budget to be spent on staff and consultancy costs to plan the survey and provide documentation than originally envisaged. There has been less expenditure than first estimated on operating costs, with the deposit on the yacht charter the main operational outgoing in this financial year. These changes were highlighted in a change request in October 2016 which was approved by LTS.
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs			-30%	
Capital items				
Others (Please specify)				
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2016-2017 – if appropriate

n/a A logical framework was not required as the grant was for less than £100,000.

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed) - – if appropriate

n/a - A logical framework was not required as the grant was for less than £100,000.

Annex 3. Operational Plan and Environmental Impact Assessment

Draft copies of our Operational Plan (24 pages) and Environmental Impact Assessment (19 pages) are available on request. The Front Covers and Tables of Contents are included here.

South Georgia Habitat Restoration Project:

Phase 4 (final survey) Operational Plan (5th draft).

South Georgia Heritage Trust

January 2017

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South Georgia Habitat Restoration Project, Phase 4

Environmental Impact Assessment for the use of rodent detection dogs on South Georgia

South Georgia Heritage Trust

December 2016

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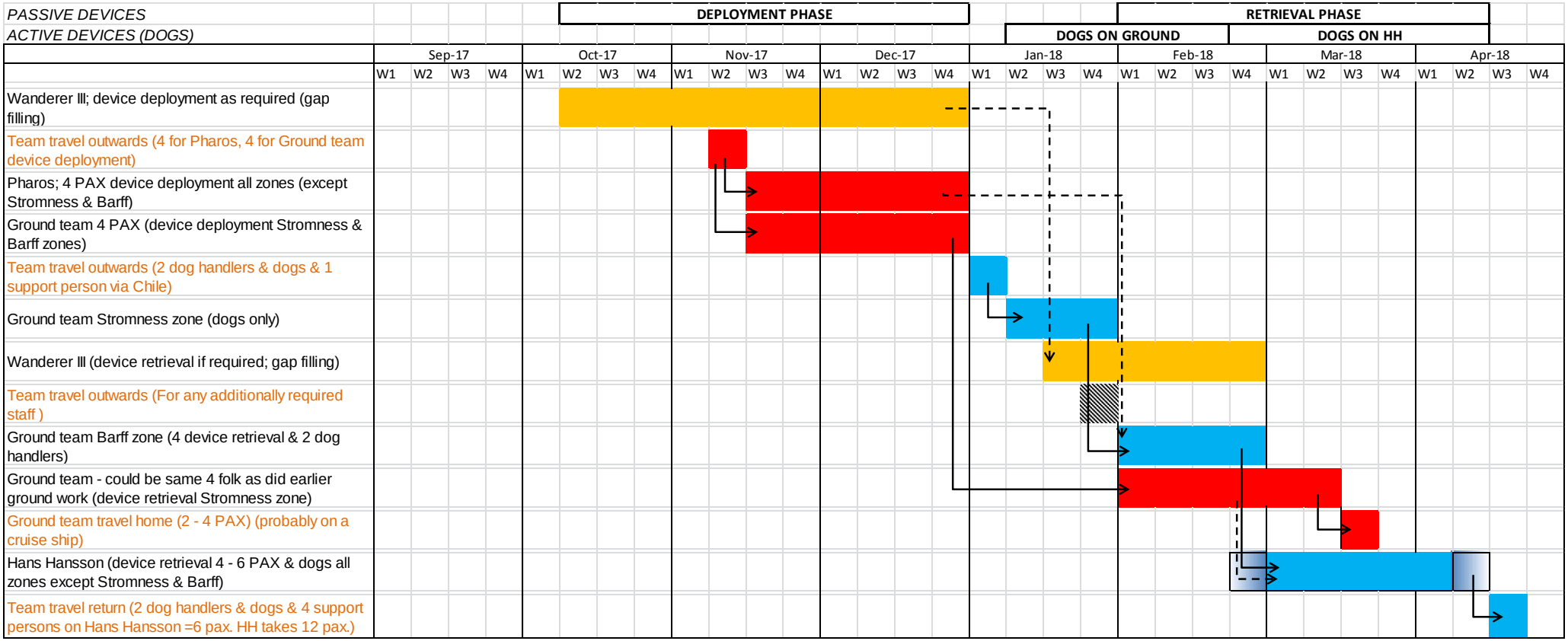
Annex 4. Logistics Chart and Schedule



Logistics schedule

The *Pharos S.G.* team will carry out a comprehensive device deployment operation in the Phase 2 and Phase 3 areas, excepting the Stromness and Barff zones, in November and December 2017.

Ground teams will deploy devices between mid-Nov and the end of December in the Barff and Stromness zones. *Wanderer III* may be able to assist if need be, i.e. if they get behind schedule.

Persons A, B, C and D travel in 2nd week of November to join Pharos deployment until end of December 2017.

Persons E, F, G and H travel in 2nd week of November to deploy devices at Stromness and Barff until end of December 2017.

The dog team and one support person will be deployed to the Stromness zone on or around Jan 8th, staying for some 3 weeks, their task being solely to survey the area with the dogs. Around Jan 29th, or on completion of the task if sooner, these people and the dogs will be picked up and taken to KEP for a few days R&R.

Dog Handlers DA and DB travel in 1st week of January to survey Stromness zone till the end of January. An extra support person may or may not be needed.

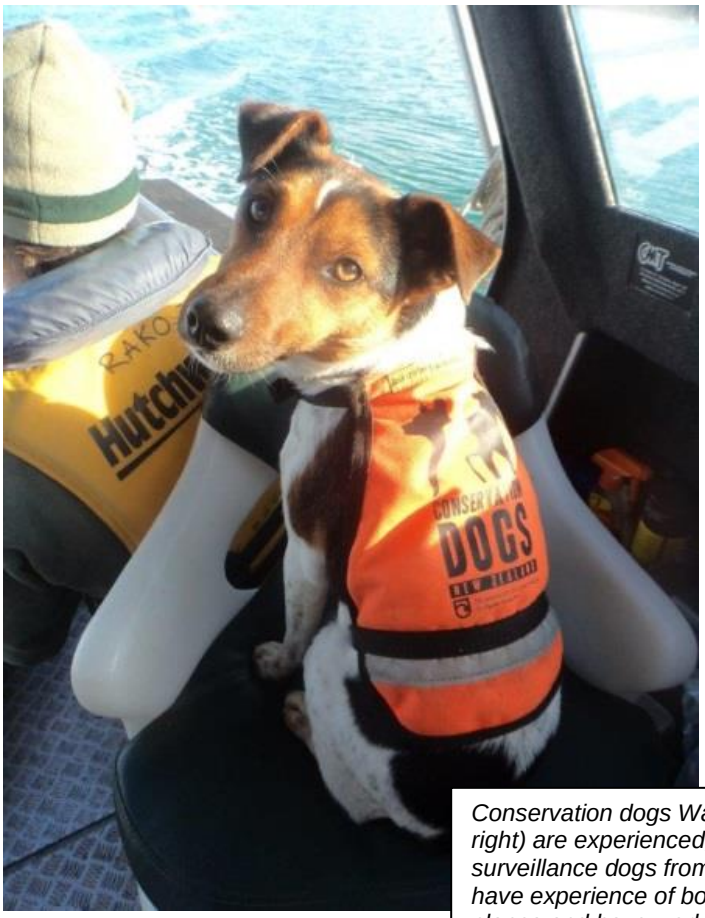
A further 3/4 people will join them at KEP, and they will all then be deployed to the Barff zone, at which time the 4 non dog-handlers become a device collecting team. These 6 people (Team A, B, C, D plus DA and DB) and the 3 dogs will remain on the Barff (with a mid-term break at KEP) until a few days before the *Hans Hansson* arrives from Stanley. This would give them 4 weeks to cover a coastline of 153 km.

On or around Feb 1st, a separate ground-based device retrieval team (Team E, F, G and H) will be sent to the Stromness zone, and will remain there until all devices have been collected. This team will travel out of SG in mid-March on a cruise ship.

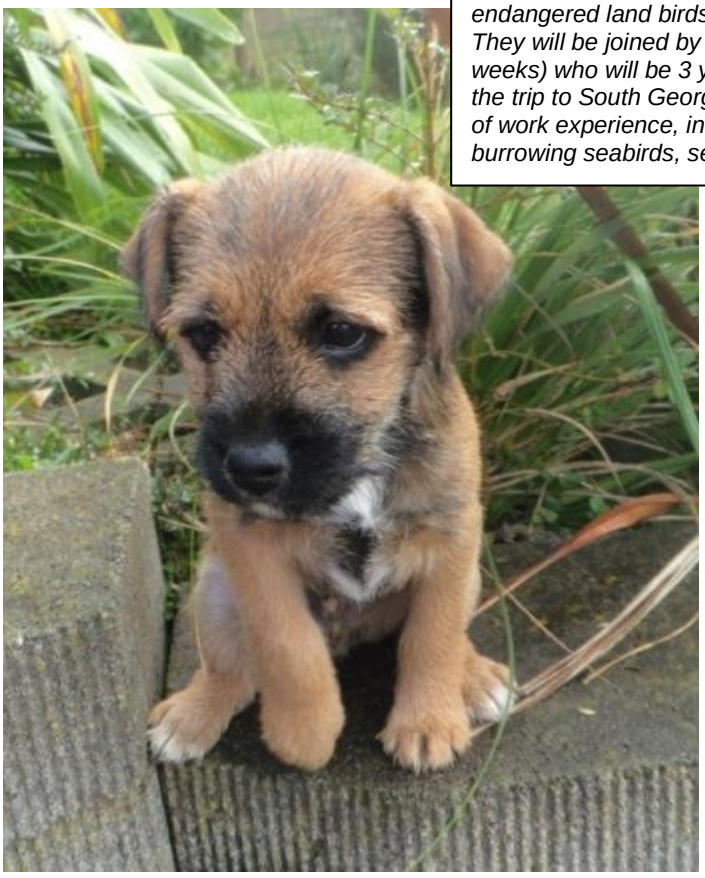
The Barff team will join the *Hans Hansson* at KEP on or around March 1st, on its arrival from Stanley, having had at least a short break there beforehand. The vessel will then convey the team (device lifters and dogs) to all sites which were targeted by the *Pharos* device deployment team, even if those teams did not get ashore. At such sites, and any others that are deemed essential to visit but were not reachable by *Pharos* or *Wanderer III* at the outset, a survey by the dogs will be adequate for the purposes of this survey. Everyone on board (and the dogs) (Team A, B, C, D plus DA and DB) will then travel back to Stanley on the *Hans Hansson* at the completion of the charter, leaving SG in early April.

Annex 5. Photographs

a) Our Team of Rodent Detection Dogs



Conservation dogs Wai (top left), and Will (top right) are experienced, certified rodent surveillance dogs from New Zealand. They have experience of boats, helicopter and planes and have worked around burrowing seabirds, penguins and seals as well as endangered land birds such as takahe and kiwi. They will be joined by Ahu (bottom left, aged 9 weeks) who will be 3 years old at the time of the trip to South Georgia, with a year and a half of work experience, including working around burrowing seabirds, seals and penguins.



b) Examples of some of the passive rodent detection devices to be deployed.

Wax Tags (Peanut butter flavoured)

The tags used previously are manufactured by Pest Management Services© (Christchurch NZ). Approximately 1000 will be available for deployment.

Camera Traps

Camera traps are relatively expensive and therefore only a limited number (max 20) will be deployed during the 2017/18 work. The devices that will be used are Bushnell Trailcams, (model number 119537C).

Tunnel Traps

These are short tunnels which can be made from a simple corrugated plastic such as the Coreflute© or Correx© material used in chewboards. Onto the floor of the tunnel is placed a special tracking card (500 x 100mm) that records the footprints of animals that enter the tunnel.

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	✓
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	n/a
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	✓
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	n/a
Have you involved your partners in preparation of the report and named the main contributors	n/a
Have you completed the Project Expenditure table fully?	✓
Do not include claim forms or other communications with this report.	