Darwin Plus:
Overseas Territories Environment and Climate Fund

Final Report

Important note *To be completed with reference to the Reporting Guidance Notes for Project Leaders: it is expected that this report will be a maximum of 20 pages in length, excluding annexes*

Darwin Project Information

Project Ref Number	DPLUS038
Project Title	Mapping Ascension Island's Terrestrial Ecosystem
Territory(ies)	Ascension Island, St Helena & Falkland Islands
Contract Holder Institution	Ascension Island Government Conservation Department
Partner Institutions	Environment Systems Ltd., RBG Kew, SAERI
Grant Value	£39,835
Start/end date of project	01/04/2015 – 31/07/2016
Project Leader Name	Drs Sam & Nicola Weber
Project website/Twitter/Blog etc.	www.ascension-island.gov.ac/government/conservation/ Facebook: www.facebook.com/AscensionIslandConservation Twitter: @AIGConservation
Report author(s) and date	Sam Weber, 29th July 2016

1 Project Overview

Ascension Island has a varied landscape, ranging from barren lava flows to a lush cloud forest. The Island also has one of the world's most heavily invaded terrestrial ecosystems. More than 95% of plant species are introduced, many of which are invasive with rapidly expanding ranges. Indeed, habitat loss and ecosystem modification are widely regarded as the major threats facing the Island's native, terrestrial biodiversity. Accurate, fine-scale habitat mapping is urgently needed to understand current species distributions, identify opportunities for restoration, and model the future spread of invasive vegetation. However, prior to the current project, no land cover map existed for Ascension Island, and other fundamental geo-physical layers needed for habitat classification, such as climate and a digital terrain model (elevation, aspect, exposure) were also lacking. Using a variety of field-based and remote sensing techniques, the project aimed to produce the first robust habitat map of Ascension Island, hosted within a regional GIS framework. The project also sought to develop potential applications and build the technical skills needed to carry out land cover classification within the South Atlantic UKOTs, thereby enabling future habitat mapping exercises in these highly dynamic environments.

2 Project Achievements

2.1 Outcome

Outcome:	The project will produce the first terrestrial habitat map of Ascension Island as a base layer for modelling current species distributions, predicting future ecosystem change and planning conservation action.		
	Baseline	Change by 2016	Source of evidence
Creation of a digital elevation model (DEM) and associated topographical layers.	A coarse (90m resolution) DEM was available from NASA Shuttle Radar Topography Mission (SRTM) data.	A detailed (2m resolution) DEM has been produced using stereo WorldView 2 imagery and derived slope and aspect layers have been generated.	See Annex 4 (Environment Systems final report); South Atlantic Information Management System online metadata catalogue.
Creation of a fine-scale land cover map of Ascension Island, refined and augmented with field data.	A crude vegetation map created by sight from satellite imagery in 2005 was available, although this was not ground-truthed by field data and was considered too inaccurate to be of use.	A hierarchical habitat classification scheme and land-cover map has been produced using object-based image classification and more than 700 field survey points for ground-truthing and ruleset creation.	See Annex 4 (Environment Systems final report); South Atlantic Information Management System online metadata catalogue.
Knowledge and capacity for terrestrial habitat mapping in the South Atlantic UKOTs is significantly advanced.	St Helena, Ascension Island and the Falkland Islands had invested in specialist GIS skills through the SAERI regional IMS-GIS initiative, but technical skills needed to analyse and ground-truth remotely-sensed imagery were lacking.	Five UKOT workers from St Helena (2), Ascension Island (2) and the Falkland Islands (1) have been trained in habitat survey methods and land cover classification using remote-sensing imagery. Workshop participants are currently embarking on a similar exercise on St Helena using methods developed during this project.	RBG Kew Field Report (Annex 5); Environment Systems Remote Sensing Workshop training materials (Annex 6) Project DPLUS052 (Mapping St Helena's Biodiversity and Natural Environment)

The primary purpose of the project was to produce a fine-scale terrestrial habitat map of Ascension Island and this objective has now been achieved. A detailed digital elevation model, land cover classification and topographical relief layers have all been produced and are described in more detail in Annex 4. These datasets have been deposited in AIG Conservation Department's Data Archive and are now freely available to support conservation planning and research in the Territory. Metadata records have also been logged in the regional Information Management System and GIS maintained by SAERI (http://south-atlantic-research.org/metadata-catalogue) where they are accessible through an online search facility and data request process (see records AC-AIGCD-106-108, 110-114 & AC-ESL-1).

As detailed in the Environment Systems final report (Annex 4) and in the project half year report, a number of technical and logistical difficulties were encountered in the delivery of these outputs. These included:

- Ascension's inaccessible terrain and the heterogeneous nature of its predominantly invasive vegetation meant that ground-truthing of land cover was substantially more time consuming than originally anticipated. The need to generate a novel habitat classification scheme also added to the amount of post-processing and statistical analysis required. To help manage this workload Mr Philip Lambdon, an affiliate of RBG Kew and consultant with an intimate knowledge of the Island's flora, was contracted at short notice for a two month period to assist the local Conservation team with vegetation surveys and data analysis.

- Complex vegetation mosaics and spectrally-variable surface geology also made it difficult to accurately discriminate between a number of habitat types (such as montane habitats and various forms of open scrub and dry grasslands) in satellite imagery meaning mapping was necessarily limited to higher-level classifications (see Annex 4). Some progress towards resolving complex mosaics was made through an unexpected collaboration with atmosphere scientists from the University of Bristol (research group of Dr Jim Freer), who helped to trial Unmanned Autonomous Vehicle (UAV), or drone, imaging of upland areas and sparse grasslands which were then manually classified by the project team for splicing into the final classification (see Figure 1.) The method holds much promise as a vegetation monitoring tool and is discussed further in Section 4.

- The software that was originally licensed to create the DEM failed to produce satisfactory results, despite extensive work by Environment Systems. This was not anticipated and although an alternative software solution was eventually found, production of the final DEM was delayed until May 2016.

While these various challenges were overcome, the delays incurred meant that Output 4 (Development of management applications informed by the habitat map) could not be achieved within the timeframe of the project. In retrospect, the applications selected for development (such as mapping invasion risk and assessment of land crab distribution and population size) were overly ambitious within a one year project and, in some cases, warrant specific projects in their own right. Nevertheless, the habitat layers needed to deliver these analyses have now been produced and will enable future projects to accurately model the distributions and spread of a wide range of terrestrial flora and fauna.

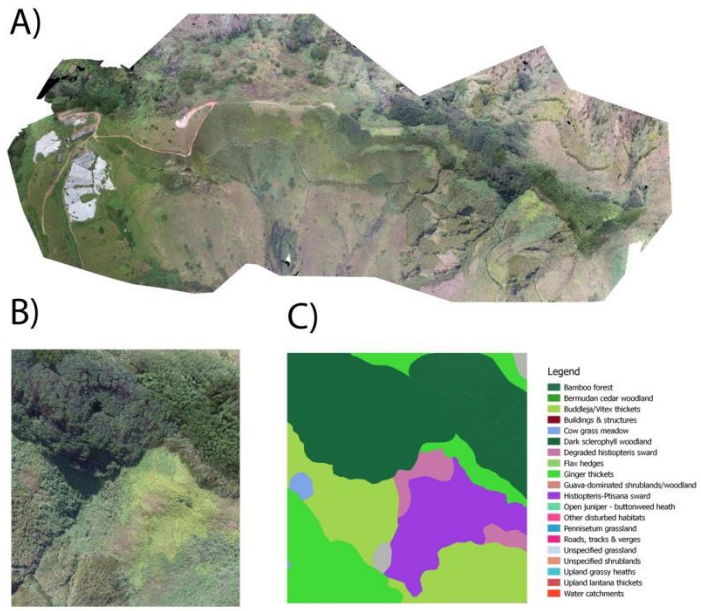

Figure 1. Use of drone imagery to classify complex vegetation mosaics in upland areas. (A) A stitched orthomosaic of >100 drone images shot over Green Mountain in about 1 hour. (B) The level of vegetation detail visible in drone images. Boundaries are then manually digitised in GIS software to create a classified layer as shown in (C). Bright green vegetation in (B) is native fern sward not visible in satellite imagery but which can be classified into both pristine (purple) and degraded (pink) types using drone imagery (C). These manually produced layers are then spliced into the final habitat map.

2.2 Long-term strategic outcome(s)

The project has produced the first detailed land cover map and topographical relief layers of Ascension Island, which are a pre-requisite for monitoring and predicting the spread of invasive species, mapping and modelling the distributions of threatened native flora and fauna and identifying opportunities for restoration or management. The need for detailed terrestrial habitat mapping had been highlighted in several Species and Habitat Action Plans within the Ascension Island NBAP and several other priority actions are reliant upon having this in place. The datasets created are now freely accessible to managers and researchers working within the Territory and outside and constitute a valuable, lasting resource to support conservation planning, research and change monitoring on Ascension Island. The approaches and data systems developed during the project are currently being used to map the terrestrial ecosystem on St Helena through a Darwin-Initiative funded project, demonstrating wider impact and legacy in the region. Given the considerable upfront costs of satellite imagery and the analysis time needed to process it, the total spend of ca. £38,500 would appear to represent good value for money when compared to the range of outputs produced.

2.3 Outputs

Output 1:	Satellite imagery sourced, processed and preliminary habitat map produced.			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Satellite image for 2015 will be acquired from which a preliminary land cover classification and DEM will be produced and sent to AIGCD.	Satellite imagery from 2005 was available along with a crude vegetation map digitised by sight and a 90m resolution DEM from SRTM data.	High-resolution (2m) WorldView 2 imagery has been sourced and processed by Environment Systems and passed to AIGCD. A 2m resolution DEM has been produced by Environment Systems and passed to AIGCD, along with raw stereo imagery used in its creation. A high resolution (2m) vegetation map has been produced using object-based image classification techniques and validated using >700 ground control points.	Environment Systems Ltd. final report (Annex 4) and Figure 2. below. South Atlantic Information Management System online metadata catalogue, particularly items AC-AIGCD-106 to 108 and AC-ESL-1.	

Output 2:	Habitat map ground-truthed, refined and augmented with field data.			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
AIGCD trained in habitat survey techniques	AIGCD had some botanical expertise but had not previously undertaken quantitative habitat surveys.	Two AIGCD team members have been trained in habitat survey techniques by experts from RBG Kew, including use of mobile GIS field computers. Trimble field computers are now in routine use for many aspects of the Department's work.	RBG Kew field report (Annex 5)	
Ground-truthing data collected to refine and validate land cover classifications	Some geo-referenced botanical surveys from 2009 were available to act as 'training data' for land cover classifications.	704 sites have been surveyed for abundance of individual plant species, vegetation structure, substrate type and other habitat variables. These were used as the input for the rule-based land cover classification in Output 1.	AIGCD habitat mapping database (item AC-AIGCD-113 in metadata catalogue);	
Soil and climate data layers produced.	Meteorological data was available from 4 west coast stations operated by the UK Met Office; bedrock geology had been mapped;	Meteorological data are available for 15 sites and have been consolidated into a single, georeferenced database. This includes 7 monitoring stations established during the project and a further 4 data sources developed through collation of historical material and collaborations with the US Department of Energy and Max Planck Institute initiated during the project. For reasons	AIGCD meteorological database (item AC-AIGCD-114) and Figure 2D (below).	Further analysis is required to convert point measurements into raster surfaces and this is currently in progress.

		explained in the half year report and elaborated below, no progress has yet been made on soil mapping, although plans are now in place to address this through a regional Darwin-funded project[1].		

Output 3:	Cross-territories workshop held on remote sensing techniques			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Representatives from 3 South Atlantic UKOTs will attend a workshop held on Ascension Island. Training manuals will be produced.	No specific in-Territory experience of remote sensing image analysis and ground-truthing within the SAUKOTs.	Five SAUKOT conservation workers from St Helena (2), Ascension Island (2) and the Falkland Islands (1) have been trained in remote-sensing image classification techniques and are applying the knowledge gained within their own Territories. 8 training manuals and presentations produced; 1 regional "best practice" guide developed.	Workshop participants are currently leading a similar project on St Helena, funded by the Darwin Initiative (DPLUS052), ensuring that the skills developed are retained within the Territories. Environment Systems Remote Sensing Workshop training materials (Annex 6)	

Output 4:	Cross-territories workshop held on remote sensing techniques			Comments (if necessary)
	Baseline	Change recorded by 2016	Source of evidence	
Invasion risk layers for *Prosopis* and *Casuarina* are produced; suitable habitat for endemic plant restoration is mapped; land crab distribution	Applications are hindered by the lack of a fine-scale habitat map.	As explained in Section 2.1, limited progress has been made towards achieving Output 4 due to delays encountered delivering Outputs 1 and 2. However,	See above.	

and population size are assessed.		it is clear that the constraints on achieving these analyses have now been lifted as a result of the project.		

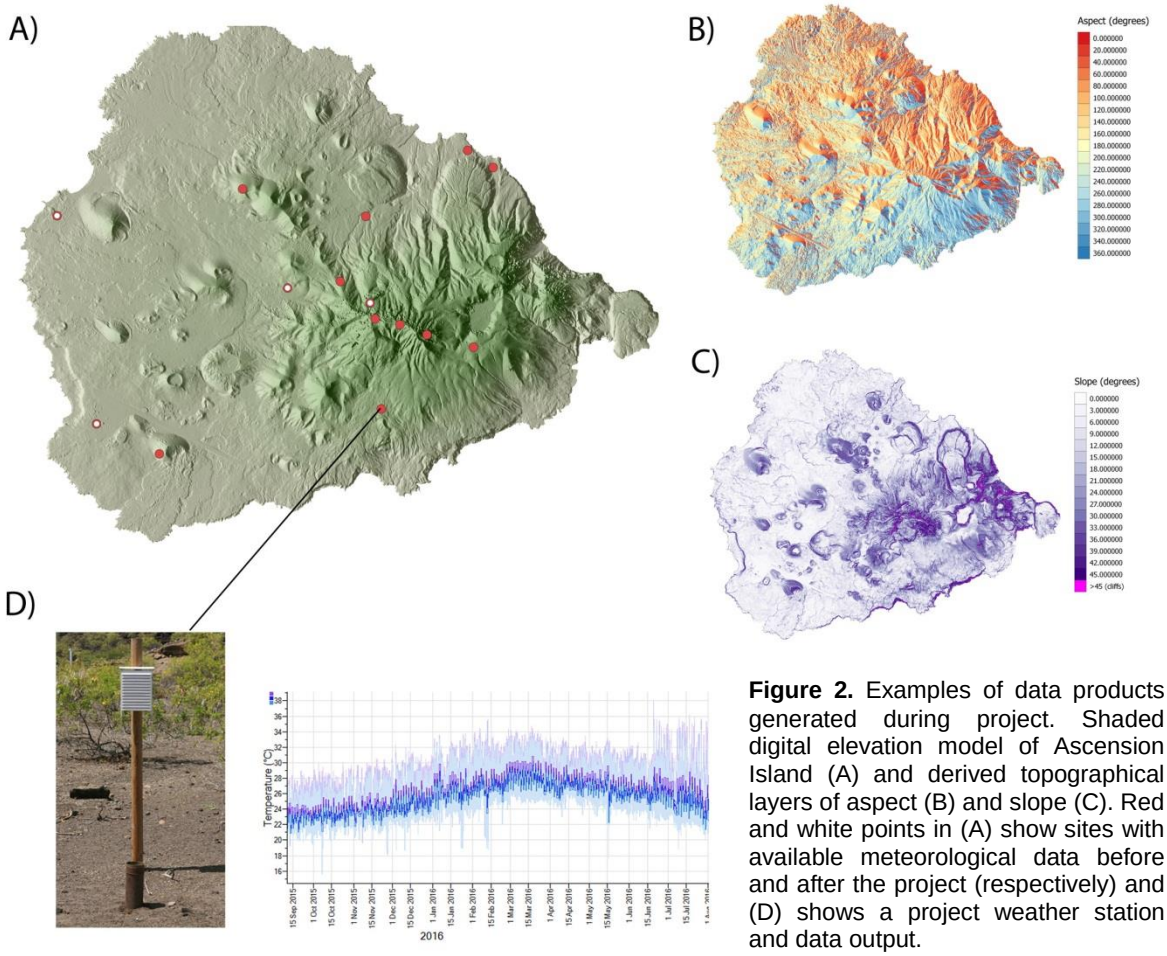

Figure 2. Examples of data products generated during project. Shaded digital elevation model of Ascension Island (A) and derived topographical layers of aspect (B) and slope (C). Red and white points in (A) show sites with available meteorological data before and after the project (respectively) and (D) shows a project weather station and data output.

[1]With the exception of Output 4 (which is explained in more detail in Section 2.1), the only output that could not be delivered in full was the creation of a soil map. It was originally expected that the local conservation team could deliver a soil sampling and analysis regime with remote support from ecologists at Environment Systems. However, it became clear that Ascension Island Government lacked the technical knowledge to implement a meaningful programme of soil science without dedicated on-island support and/or access to costly overseas analytical facilities. Discussions were held with professional soil scientists at the University of Aberystwyth (through Environment Systems) regarding facilitating the soil mapping elements of the project but sufficient time and budget had not been allocated to take this forward. Training in soil analysis and mapping will now be provided by these collaborators through Darwin Project DPLUS052 on which AIG Conservation Department are a partner. Thus, while the project did not achieve this objective, it did lay the groundwork for future completion and generate regional interest in ecosystem mapping which is now being taken forward.

2.4 Sustainability and Legacy

The project has produced fundamental habitat datasets needed to underpin future conservation planning, invasive species monitoring and biodiversity research on Ascension Island. The outputs will be made freely available in perpetuity through local and regional information management systems to support managers and researchers working in the Territory and outside. The data systems and approaches developed during the project and the capacity building and networking opportunities resulting from the cross-territories training event have helped to spawn a similar habitat mapping exercise on St Helena, funded by the Darwin Initiative, which represents a clear legacy within the region.

3 Project Stakeholders/Partners

The primary stakeholders in the current project were Ascension Island Government Conservation Department and partners in St Helena and the Falkland Islands who attended the regional training event. Environment Systems provided specialist remote sensing and image analysis services to AIG through a mutually agreed contract and held regular (at least quarterly) Skype meetings with the project leaders to provide progress updates and discuss further analyses. Environment Systems also led the regional remote sensing workshop, with content agreed in advance by all stakeholders to meet specific training needs. The workshop was well received by all participants and the approaches discussed fed directly into a proposal for similar work on St Helena (see Section 2.4). AIGCD have continued to provide support for the team in St Helena as they set up their habitat mapping programme, including the provision of database templates and advice on equipment etc.

4 Lessons learned

The current project represented the first attempt to create a remotely-sensed land cover map of Ascension Island and, as such, the feasibility of this exercise was largely unknown. While the project successfully delivered the most detailed representation of the Island's vegetation to date, the complications described above meant that mapping habitats at the finest levels of classification from satellite imagery was often not possible and frequently resulted in class confusion. For monitoring change in vegetation composition at these finer scales, manual mapping using drones may represent a more tractable solution on small islands like Ascension. Trials carried out over upland areas and in lowland lava deserts in collaboration with the University of Bristol demonstrated the level of detail that could be achieved in drone imagery and the ease of discriminating between vegetation types, including critical native and endemic habitat that cannot be distinguished in satellite imagery (see 2.4). The establishment of a British Army drone training facility on Ascension Island in 2016 has created considerable opportunities for obtaining high resolution aerial imagery of the Island and AIG Conservation Department plans to explore the use of this imagery for mapping key conservation features at an even finer scale than has been achieved by the current project.

It was hoped that through capacity building elements of the project, the skills to generate land cover classifications from remote sensing imagery could be retained within the SAUKOTs and enable future vegetation change monitoring in these often highly dynamic and heavily-invaded environments. However, following the cross-territories workshop it has become clear that the cost of software licenses and the level of training needed to achieve robust results means that specialist input from external consultants will continue to be needed for future island-wide mapping exercises. Nevertheless, all attendees at the workshop agreed that an understanding of the approaches used and the results achievable were essential for UKOT workers to become "educated consumers" of remote sensing products. Open source software options were also explored that may be useful for routine mapping of key biodiversity areas at a more localised scale, particularly if used in conjunction with cheaper drone imagery.

The allocation of resources to the project and the expertise recruited was generally appropriate; however the employment of a dedicated project officer to manage on-island elements would have been valuable to maintain focus. Developments in marine conservation on Ascension

during the project, particularly surrounding the highly politicised creation of an offshore marine protected area, has consumed a significant amount of time for AIG scientific staff and made it difficult to honour matched-time commitments. While the hiring of a project officer would have added to the budget, we would recommend that future projects plan for unexpected demands on the time of existing staff members to avoid leaving small, on-island teams overstretched.

Given these additional time demands, and delays encountered during the project, the timeframe allocated was too short to achieve all of the outputs that were promised in the original bid and resulted in Output 4 not being met. In hindsight, the volume of work required to deliver Output 4 was unrealistic within a 1 year project and with no dedicated staff member. Based on these experiences the Department will ensure that future projects include budget for dedicated project staff and allocate sufficient time to deliver all outputs.

4.1 Monitoring and evaluation

No major changes were made to the project design, although the significant workload involved in field mapping meant that additional help had to be recruited at short notice (see Section 2.1). This shortfall in local capacity was identified swiftly following the RBG Kew training visit and the project leaders worked with partners at Kew to find a solution that enabled field elements to be completed in a timely fashion. Monitoring and evaluation of remote sensing elements was primarily carried out through Skype conferences between AIG project leaders and Environment Systems using shared screens to review data products created and discuss further work required to improve outputs. This approach generally worked well, although limited bandwidth on Ascension Island inevitably makes online conferencing with external partners challenging. Skype conferences were held at least quarterly, and more frequently during the active phases of data creation, but in hindsight could have been more structured in terms of clear timings for delivering key milestones. As discussed above, the lack of a dedicated on-island Project Officer made it difficult to maintain this level of project steering at times so addressing this capacity issue in future would significantly streamline the M&E process.

4.2 Actions taken in response to annual report reviews

The project was initially planned as a one year exercise and as such no annual reports were produced for review.

5 Darwin Identity

Publicity and outreach were not key elements of the current project, which was more concerned with baseline data creation and ecological mapping. Nevertheless, every effort has been made to ensure that the Darwin Initiative's contribution to this exercise is acknowledged. All final reports and training materials produced have the Darwin logo prominently displayed, and a requirement to acknowledge Darwin funding in all future uses of the datasets generated is stated within the "Usage Constraints" of the online metadata records for each product. The Darwin Initiative have been the major external funder of conservation activities on Ascension Island over the past 5 years and the Darwin brand was already well known to Island residents before the project began. This has been strengthened through the Darwin-funded Ascension Island Marine Sustainability (AIMS) project, which ran concurrently with the current project and had a considerable public education and awareness-raising element. The logo appears on Government vehicles and many of the publicity and educational materials that have been generated by the Conservation Department through previous projects.

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			2.1	
Consultancy costs			0	
Overhead Costs				
Travel and subsistence			5.5	
Operating Costs				
Capital items			27.2	Soil sampling equipment was not purchased (see Section 2.3). These funds will be returned to Darwin.
Others			0	
TOTAL	39835	38514.31		

Staff employed (Name and position)	Cost (£)
Mr Phillip Lambdon, Independent Researcher & RBG Kew affiliate	
Ms Marcella Corcoran, UKOTs Officer, RBG Kew	
Ms Jenny Williams, Senior Spatial Analyst, RBG Kew	
TOTAL	**6880**

Consultancy – description of breakdown of costs	Other items – cost (£)
Environment Systems: Processing of satellite imagery and production of preliminary habitat map Environment Systems: Preparation and delivery of cross-territories worksho on remote sensing techniques and input into habitat map ground truthing analysis Environment Systems: Creation of DEM and finalistation of habitat map and associated outputs	
TOTAL	17800

Capital items – description	Capital items – cost (£)
Trimble handheld GIS computer Meteorological stations (screens, temperature loggers and rain gauges)	
TOTAL	2331.06

Other items – description	Other items – cost (£)
Purchase of satellite imagery	
TOTAL	4850

6.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
AIG Project Leader salary contributions (in kind)	
Transport & fuel for fieldwork (in kind)	
Use of AIG facilities and consumables for training workshops	
SAERI salary contributions for Falkland and St Helena GIS managers (in kind)	
TOTAL	**11050**

Source of funding for additional work after project lifetime	Total (£)
TOTAL	

6.3 Value for Money

A conscious effort was made during the development of the project to minimise costs wherever possible and this is reflected in the budget requested. Around 60% of the total spend was allocated to satellite imagery and specialist consultancy fees to analyse this, which were unavoidable costs that were fundamental to delivering the primary objective of the project. Satellite imagery of the type required has a fixed pricing structure and the consultancy costs for the work were highly competitive, particularly given the additional work undertaken by Environment Systems to address unanticipated technical issues encountered during the creation of the DEM and landcover classification (see Section 2.1 and Annex 4). The remainder of the budget was primarily allocated to supporting the cross-territories workshop and fieldwork training and support by RBG Kew (35%). These were valuable exercises that enabled rigorous field validation of the habitat classification produced and have helped ensure a lasting legacy for the project in the region (see Section 2.4). The salary costs of participants in the workshop were all given in kind, as was the use of AIG's facilities, ensuring good value for money when compared to the actual costs of delivering this output. Similarly, Kew kindly agreed to divert around a third of the funds originally allocated to their training visit to fund 6 weeks of fieldwork support once the need for additional local capacity had been identified (see Half Year Report and Section 2.1). This ensured that the project was completed under budget despite additional staffing requirements not factored into the original proposal.

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)	0
2	Number of (i) people in UKOTs; and (ii) other people receiving other forms of long-term (>1yr) training not leading to formal qualification	0
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)	5 (training through RBG Kew field surveying trip and Environment Systems remote sensing workshop)
3b	Number of training weeks (i) in UKOTs; (ii) outside UKOTs not leading to formal qualification	i) 3 (as above) ii) 0
4	Number of types of training materials produced. Were these materials made available for use by UKOTs?	
5	Number of UKOT citizens who have increased capacity to manage natural resources as a result of the project	5 (as above)
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	0
10	Number of formal documents produced to assist work in UKOTs related to species identification, classification and recording.	1 (Hierarchical habitat classification system)
11a	Number of papers published or accepted for publication in peer reviewed journals written by (i) UKOT authors; and (ii) other authors	0
11b	Number of papers published or accepted for publication elsewhere written by (i) UKOT authors; and (ii) other authors	0
12b	Number of computer-based databases enhanced (containing species/genetic information). Were these databases made available for use by UKOTs?	2 (Vegetation mapping database and final habitat classification shapefile)
13a	Number of species reference collections established. Were these collections handed over to UKOTs?	0
13b	Number of species reference collections enhanced. Were these collections handed over to UKOTs?	0

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	0
14b	Number of conferences/seminars/ workshops/stakeholder meetings attended at which findings from the Darwin Plus project work will be presented/ disseminated	0
Physical Measures		
20	Estimated value (£s) of physical assets handed over to UKOT(s)	£2331.06 (or £7181.06 if including satellite imagery)
21	Number of permanent educational/training/research facilities or organisation established in UKOTs	0
22	Number of permanent field plots established in UKOTs	7 (Meteorological monitoring stations)
23	Value of resources raised from other sources (e.g., in addition to Darwin funding) for project work	£11,050

Annex 2 Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details. Mark (*) all publications and other material that you have included with this report

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)

Annex 3 Darwin Contacts

Ref No	DPLUS038
Project Title	Mapping Ascension Island's Terrestrial Ecosystem
Project Leader Details	
Name	Drs Sam & Nicola Weber
Role within Darwin Project	Fieldwork, project and budget management
Address	AIG Conservation Department, Georgetown, Ascension Is.
Phone	
Fax/Skype	
Email	
Partner 1	
Name	Dr Johanna Breyer
Organisation	Environment Systems Ltd.
Role within Darwin Project	Project manager from remote sensing consultant. Responsible for image analysis, habitat classification and DEM creation.
Address	11 Cefn Llan Science Park, Aberystwyth, Ceredigion SY23 3AH
Fax/Skype	
Email	
Partner 2	
Name	iLaria Marengo
Organisation	South Atlantic Environment Research Institute
Role within Darwin Project	Metadata manager and attended cross-territories remote sensing workshop.
Address	
Fax/Skype	
Email	
Partner 3	
Name	Samantha Cherrett
Organisation	St Helena Government
Role within Darwin Project	Attended cross-territories remote sensing workshop and currently leading a habitat mapping project on St Helena
Address	
Fax/Skype	
Email	
Partner 3	
Name	Colin Clubbe

Organisation	RBG Kew
Role within Darwin Project	Managed RBG Kew involvement in the project, including the organisation and preparation of training visit by Kew staff.
Address	
Fax/Skype	
Email	