



Darwin Initiative Main/Post/D+ Project Half Year Report (due 31st October 2018)

Project reference	DPLUS065
Project title	Mapping Falklands and South Georgia coastal margins for Spatial Planning
Country(ies)/territory(ies)	Falkland Islands / South Georgia and the South Sandwich Islands
Lead organisation	South Atlantic Environmental Research Institute (SAERI)
Partner(s)	Oregon State University (OSU); Shallow Marine Surveys Group (SMSG); Falkland Islands Government (FIG); Government of South Georgia & the South Sandwich Islands (GSGSSI); Joint Nature Conservation Committee (JNCC)
Project leader	Dr Paul Brickle (Project Manager: Neil Golding)
Report date and number (e.g., HYR3)	HYR2
Project website/blog/social media etc.	https://www.south-atlantic-research.org/research/terrestrial-science/coastal-mapping-project/ Twitter: @SAERI_FI, @Nautical_Neil, #SouthAtlanticCoastalMapping. Facebook: @S4ERI, SAERI Blog: https://www.south-atlantic-research.org/news/

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

Activities that were scheduled for the period FY 18/19 Q1 & Q2 are outlined below:

1. Project Management structure, and communications tools established (1.3, 1.4, 1.5, 1.6)

Regular quarterly Project Management Group meetings have been held (11th June 2018, 10th September 2018) and minutes are available on the project website¹ (1.3, 1.5, 1.6). A Project Stakeholder Group (1.4) (in the form of the Stakeholder prioritisation workshop) was held in August 2018; the workshop reports are being finalised. The project website has been updated with meeting minutes and other news items², whilst the project has been active on social media, posting regularly on Facebook and Twitter (Figure 1.1).

2. Work Package 1 WP1: Digitised 50-year-old aerial imagery (FI only) (2.2, 2.3, 2.4)

Work Package 1 is considered largely complete. A digital map of the 1956 aerial imagery has been created for the Falkland Islands. This digital map is composed of nearly 3,675 black and white aerial images. The 1956 aerial imagery layer is being integrated within the Coastal Habitat Mapping WebGIS as this is developed under the wider project dissemination programme, (https://data.saeri.org/saeri_webgis/lizmap/www/index.php/view/map/?repository=v07&project=fi_coastal_hab_map), and individual images are downloadable directly from the website. It should be noted that the original extent of the task exceeded the time available within the project, as alluded to in the DPLUS065 Coastal Mapping Annual Report 1. However, innovative techniques developed by the SAERI IMS data

¹ <https://www.south-atlantic-research.org/research/terrestrial-science/coastal-mapping-project/coastal-mapping-project-download-area/>

² <https://www.south-atlantic-research.org/research/terrestrial-science/coastal-mapping-project/coastal-mapping-project-latest-news/>

centre allowed the writing of a script to automate the image geo-referencing process; the script will be run for each aerial image (loaded on the WebGIS) when requested by an end user.

Figure 1.1: DPLUS065 Coastal Habitat Mapping project outreach on Twitter

3. Work package 2 (WP2): Object based image analysis and habitat modelling of the coastal margin (FI and SG) (3.3, 3.4)

This element of the project has progressed well. The broad scale mapping was undertaken using cloud based systems (Google Earth Engine), ideal for areas where data bandwidth is limited (3.3). A final broad scale habitat map (with terrestrial and shallow coastal water components) was delivered to the project partner - Government of South Georgia & the South Sandwich (GSGSSI) - at the end of July 2018 (3.4) (see Figure 3.1). These broad scale mapping outputs were well received by GSGSSI, and were subsequently presented by them at the annual South Georgia Government's Stakeholder Event, hosted by the Foreign & Commonwealth Office in London. GSGSSI also intend to add these maps to their existing online webGIS system.

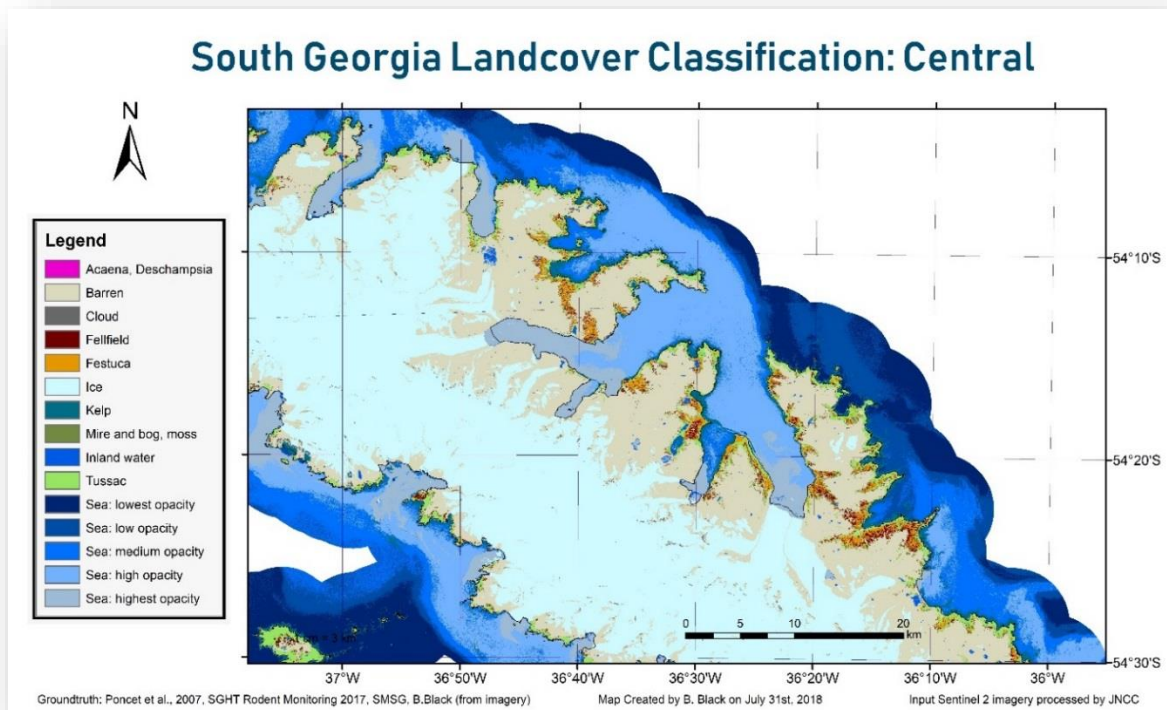


Figure 3.1: South Georgia broad scale habitat map – a section of the final deliverable.

A draft of the Falklands broad scale habitat map was produced for the Stakeholder Prioritisation workshop (see section 4 below) which was held on island in August 2018 (3.4), and the final deliverable has now been produced. A small extension to the Falklands broad scale habitat map deadline has been granted by the Project Management Group in order to allow for the integration of new data. This new data was collected during an opportunity for fieldwork which arose as part of SAERI's wider programme of work. This fieldwork was funded through another initiative, but enabled the DPLUS065 to have approximately seven extra field days at zero cost to this project, enhancing the subtidal data available to validate the habitat map model. This Falklands broad scale habitat map will soon be available on the DPLUS065 Coastal Habitat Mapping WebGIS.

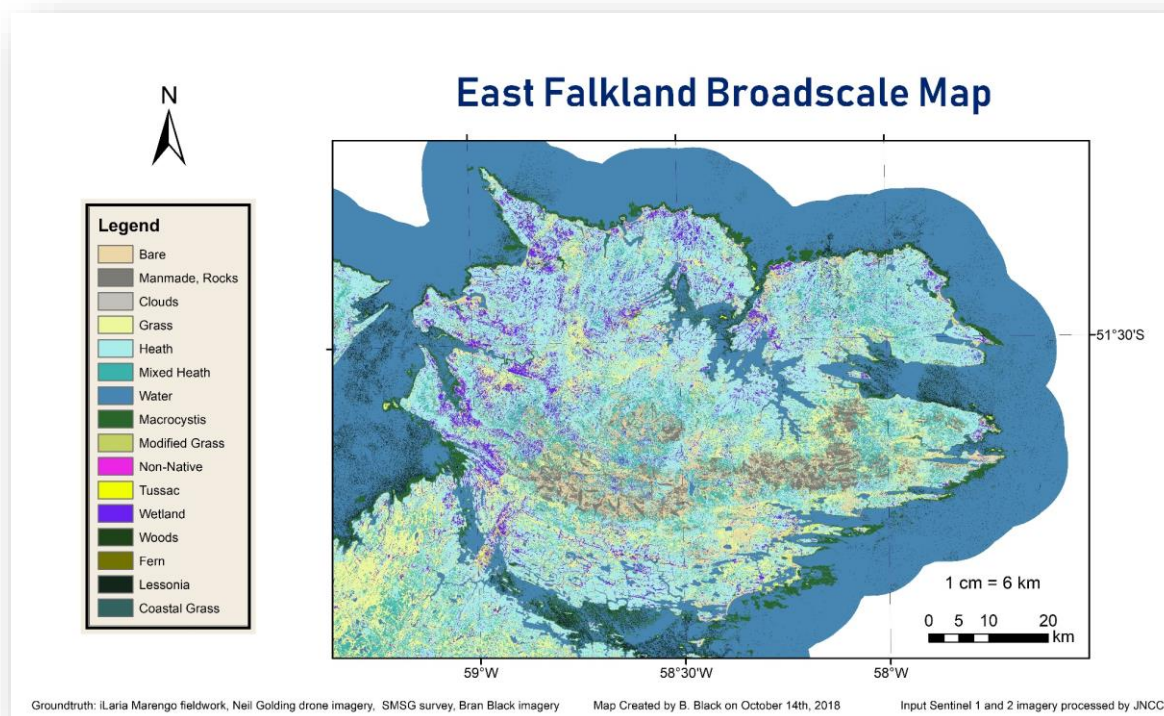


Figure 3.2: Falkland Islands broad scale habitat map – a section of the final deliverable.

4. Work Package 3 (WP3): Identification, prioritisation and fulfilment of information data needs for the systematic conservation and planning of the coastal margin for the FI and for SG

Following the successful award of approximately £worth of WorldView imagery to the project from the Digital Globe Foundation, work has started during these first two quarters reviewing, processing and mosaicking the individual images into blocks for future use.

Work has commenced conceptualising and developing the fine scale habitat modelling workflows which will be used to create the fine scale (Stage II) maps. Current thinking is that these will build on the broad scale pixel-based modelling approach used in the broad scale (Stage 1) mapping moving to an object-based approach (coded in Python) in Stage II.

Two successful Stakeholder Prioritisation workshops were held in Stanley on 8th & 9th August 2018. A clear steer was received from stakeholders on priority areas for fine scale mapping both in the Falklands and South Georgia. The workshop reports are to be circulated shortly (4.1, 4.2, 4.3). For these workshops, SAERI hosted two visiting researchers from the project partner, Oregon State University. They helped facilitate the workshop as well as getting involved in project fieldwork.

The project has already realised a number of opportunities that were discussed during the workshop. The project team have been working with SafeLane Global and the Foreign & Commonwealth Office who are involved in the Falklands Demining Project. Through this collaboration, SafeLane Global have been able to deploy Ground Control Points (GCPs) throughout the live minefields, improving the accuracy of the 3D models being developed by the Coastal Mapping project as part of the minefield habitat restoration interest. At the same time, SafeLane Global and the FCO are able to more accurately estimate volumes of sediment which may need screening as part of the demining work.

The field campaign commenced in the Falkland Islands during Y2Q2, collecting additional ground validation points for the broad scale habitat modelling work. Following the steer provided by Stakeholders through the workshop, ground validation information for fine scale mapping also commenced **(4.8)**. High resolution aerial imagery from priority areas has been acquired using the Coastal Mapping project drones **(4.5)** (see Figure 4.1). Processing of such imagery has also been undertaken **(4.6)**.

In order to develop better quality shallow subtidal maps, the project has commissioned an innovative piece of work exploring the utility of Sentinel-2 satellite imagery to create a shallow water satellite-derived bathymetry model. This work is due to deliver in Quarter 4 of FY 18/19.

A variety of project outreach has been undertaken. A good example was the presentation given to the Year 6 at the Falklands Infant & Junior School. The presentation focussed on kelp forests, an important habitat within the Falklands coastal margin, and one of intense interest to the Coastal Mapping project. The presentation was well received by all the children and staff.



Figure 4.1: An example of the type of imagery/3D models collected/developed from drone mapping missions – Newhaven ferry terminal and surrounding area.

5. Work Package 4 (WP4): Prioritisation of ongoing planning, protection and monitoring of the coastal margin

Work is scheduled to commence shortly on this Work Package, although is not due for completion until Y3 Q3 (Oct- Dec 2019)

6. Work Package 5 (WP 5) All outputs integrated with existing and emerging initiatives

Work is scheduled to commence shortly on this Work Package, although is not due for completion until Y3 Q3 (Oct- Dec 2019)

7. Monitoring and evaluation (7.1, 7.2, 7.3)

The M&E plan is available on the project website³ **(7.1)**. The M&E plan is a standing item on the quarterly PMG meetings, where progress is reviewed by the PMG. (see also PMG meeting notes) Any agreed changes to the M&E plan are uploaded onto the project website **(7.2, 7.3)**.

³ <https://www.south-atlantic-research.org/research/terrestrial-science/coastal-mapping-project/coastal-mapping-project-download-area/>

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

Following the successful award of a satellite imagery grant to the project by the Digital Globe Foundation, budget originally assigned to purchase satellite imagery was available to be reassigned to support other project activities agreed by the Project Management Group. In light of this, a change request was submitted to Darwin to redirect £of funds originally allocated to “acquisition of remote sensing data and associated costs” to other uses which will enhance the project further and provide excellent added value to the project. The change request was submitted on 11th May 2018 and was approved by Darwin on 21st May 2018.

There have been no other notable problems or unexpected developments in the last 6 months.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS:	Yes/No
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Formal change request submitted:	Yes/No
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Received confirmation of change acceptance	Yes/No
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3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

4. Are there any other issues you wish to raise relating to the project or to Darwin’s management, monitoring, or financial procedures?

Financial challenges were experienced in relation to the Y1Q3 payment of £ due to the following:

1. After a long pursuit and some misinformation, the missing payment was only tracked after 10 months and paid after 11.
2. It transpired that funds had been paid into the incorrect bank account.
3. Due to the delayed payment of a Project Partner invoice due end March but only paid end June, this resulted in a net liability to the Partner of \$ due to exchange rate fluctuation.

If you were asked to provide a response to this year’s annual report review with your next half year report, please attach your response to this document. Additionally, if you were funded under R24 and asked to provide further information by your first half year report, please attach your response as a separate document.

Please note: Any **planned** modifications to your project schedule/workplan can be discussed in this report but **should also** be raised with LTS International through a Change Request.

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 22-035 Darwin Half Year Report**