



Darwin Plus DPLUS065

Mapping the Falklands and South Georgia coastal margins for spatial planning (Coastal Mapping).

Monitoring & Evaluation Plan

Version Control Table

BUILD STATUS:

Version	Date	Author	Reason/Comments
0.1	30/03/18	NG	Initial draft
0.2	10/10/18	NG	Revised Outcome Indicator following feedback from AR1 reviewer

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1 Introduction

1.1 Purpose of this plan

This monitoring and evaluation (M&E) plan has been prepared by the DPLU065 Project Manager (PM), is approved by the Project Management Group (PMG) and forms an integral part of the project reporting progress. Oversight of the delivery of the M&E plan will be the responsibility of the PM whilst signing off on the implementation of the M&E plan will be the responsibility of the PMG.

1.2 Project summary

Title	Mapping Falklands and South Georgia coastal margins for Spatial Planning
Start/End date	1 st April 2017 / 31 st March 2020
Duration	3 years
Territories	Falkland Islands & South Georgia
Lead Partner	South Atlantic Environmental Research Institute
Other partner institutions	Oregon State University, Joint Nature Conservation Committee, Shallow Marine Surveys Group Ltd, Falkland Islands Government, Government of South Georgia & the South Sandwich Islands.
Grant Value	£278,696
Project leader name	Paul Brickle
Project goal	To create the first, island-wide, 'satellite-derived' coastal margin habitat maps for the Falklands and South Georgia, and establish a framework to enable future updates of these baseline maps by stakeholders.
Project Outcome	The mapping generated from this cost-effective and innovative remote-sensing will underpin and enhance spatial and conservation planning in the remote FI and SG and allow for efficient, effective monitoring.

2 Logical Framework

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact:</p> <p>Environmental evidence-base for decision-making on the FI and SG is significantly enhanced by the provision of baseline data in a thematic area that is a current gap i.e. coastal margin.</p>			
<p>Outcome:</p> <p>The mapping generated from this cost-effective and innovative remote-sensing will underpin and enhance spatial and conservation planning in the remote FI and SG and allow for efficient, effective monitoring.</p>	<p>0.1 The coastal habitats of the Falkland Islands are broadly classified and visualized via digital outputs (e.g. maps, GIS layers) at a spatial and temporal scale sufficient for spatial planning and decision making, by the end of March 2020.</p> <p>0.2 The coastal habitats of South Georgia are broadly classified and visualized via digital outputs (e.g. maps, GIS layers) at a spatial and temporal scale sufficient for spatial planning and decision making, by the end of March 2020.</p>	<p>0.1 FI MSP Web GIS portal</p> <p>0.2 SG webGIS portal</p> <p>0.3 SAERI project webpages.</p>	<p>SAERI's IMS-GIS Centre continues to retain relevant skilled staff</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Outputs:</p> <p>1. Project Management structure, and communications tools established</p>	<p>1.1 Project Manager recruited by end Quarter 3 FY 17/18.</p> <p>1.2 An MoU agreed and signed by all partners by end Quarter 4 FY 17/18.</p> <p>1.3 A Project Management Group (PMG) meeting held every 3 months starting October 2017.</p> <p>1.4 A Project Stakeholders group (PSG) meeting held every 6 months starting Quarter 4 FY 17/18.</p> <p>1.5 At least 1 project webpage created by end Quarter 4 FY 17/18, and at least 1 update to the page made every month.</p> <p>1.6 Final project report produced by March 2020.</p>	<p>1.1 Project Manager employment contract signed</p> <p>1.2 MOU signed by all parties</p> <p>1.3 PMG meeting notes available online</p> <p>1.4 PSG meeting notes available online.</p> <p>1.5 Project webpage available for viewing online</p>	<p>PM with the relevant skills can be recruited.</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
2. Work Package 1 WP1: Digitised 50 year old aerial imagery (FI only)	<p>2.1 1 Commence geo-referencing of 1956 aerial imagery by Quarter 4 FY 17/18.</p> <p>2.2 Complete geo-referencing of 1956 aerial imagery to create a digital map by end Quarter 2 FY 18/19</p>	2.1 1956 FI aerial imagery digital map available via MSP GIS portal	Aerial imagery is of sufficient quality to be able to be digitised. Preliminary checks suggest this is the case.
3. Work package 2 (WP2): Object based image analysis and habitat modelling of the coastal margin (FI and SG)	<p>3.1 Stage I habitat modelling and classification complete for the Falklands by September 2018.</p> <p>3.2 Stage I habitat modelling and classification (terrestrial and intertidal) complete for South Georgia by end March 2018.</p> <p>3.3 Stage I habitat modelling and classification (subtidal) complete for South Georgia, and integration with terrestrial and intertidal habitat maps (3.2) by end July 2018</p>	<p>3.1 FI coastal margin (Stage I) habitat map available online via MSP GIS portal</p> <p>3.2 SG coastal margin (Stage I) habitat map available online via South Georgia GIS portal</p>	<p>Satellite imagery at useful resolution and without cloud cover is obtainable.</p> <p>Preliminary checks suggest several options and suitable imagery will be available.</p> <p>Satellite imagery and derived products are open access.</p> <p>Preliminary enquiries and expert opinion suggest this is feasible.</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>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</p>	<p>4.1 At least 1 FI (Q3 FY 18/19) and 1 SG (Q3 FY 18/19) stakeholder workshop held to identify and prioritise data needs for the coastal margin</p> <p>4.2 Ground truthing of satellite imagery analysis on SG (Quarter 3 FY 17/18 & Quarter 4 FY 18/19) and the FI (Quarter 1 – Quarter 4 FY 18/19)</p> <p>4.3 Stage II geospatial data products reflecting prioritized information needs utilizing high res imagery to reduce uncertainty in habitat models/classifications and address spatial and temporal data priority needs expressed by stakeholders – for both the FI and SG by Quarter 1 FY 19/20</p>	<p>4.1 FI and SG stakeholder workshop report on the project page website</p> <p>4.2 FI coastal margin fine scale (Stage II) maps available online via FI MSP GIS portal.</p> <p>4.3 SG coastal margin fine scale (Stage II) maps available online via SG GIS portal</p>	<p>Satellite imagery at useful resolution and without cloud cover is obtainable. Preliminary checks suggest several options and suitable imagery will be available.</p> <p>Permissions to access study areas approved by landowners (where required).</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>5. Work Package 4 (WP4): Prioritisation of ongoing planning, protection and monitoring of the coastal margin</p>	<p>5.1 A monitoring manual produced for long-term monitoring of coastal margin for the Falklands by end Quarter 3 FY 19/20</p> <p>5.2 A monitoring manual produced for long-term monitoring of coastal margin for South Georgia by end Quarter 3 FY 19/20</p> <p>5.3 At least 1 face-to-face training workshop in implementing monitoring undertaken by end Quarter 2 FY 19/20</p>	<p>5.1 FI monitoring manual available on the project page website</p> <p>5.2 SG monitoring manual available on the project page website.</p> <p>5.3 Training workshop report available on project page website</p> <p>5.4 —Televised training available online on project page website.</p>	<p>There are in-territory staff who are well-positioned to undertake the training.</p> <p>Discussions to identify where the future long-term monitoring role would sit for both islands are underway.</p>
<p>6. Work Package 5 (WP 5) All outputs integrated with existing and emerging initiatives</p>	<p>6.1 New geospatial products maximally informed and integrated with existing FI and SG geo-spatial data initiatives</p> <p>6.2 End of project synthesis workshop for FI and SG held by end Quarter 3 FY 19/20 to decide how</p>	<p>6.1 Report on integration with other initiatives on the FI published on the project webpage.</p> <p>6.2 Report on integration with other initiatives on the SG published on the project webpage.</p>	<p>Owners and co-ordinators of existing initiatives are willing to collaborate and explore these opportunities as well.</p> <p>The support of the project partnership brings on board key leaders in these areas.</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	findings will contribute to systematic conservation planning		
7. Monitoring and evaluation	<p>7.1 Detailed Monitoring and evaluation plan produced by end Quarter 4 FY 17/18</p> <p>7.2 6-monthly updates on implementation of M&E Plan provided to PMG</p>	<p>7.1 Detailed M&E Plan available on project webpage</p> <p>7.2 M&E updates available on project webpage</p>	<p>PM has skills to deliver M&E plan</p> <p>This will be built into the Job description of the PM and the ToRs of the PMG</p>
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.1 Advertise, interview and recruit PM</p> <p>1.2 Draft and sign Project Partners MoU</p> <p>1.3 Quarterly PMG meetings</p> <p>1.4 6 monthly PSG meetings</p> <p>1.5 Monthly Webpage updates</p> <p>1.6 Complete various project management activities</p> <p>1.7 Final project report and publicity</p> <p>2.1 Explore development of a workflow to aid the geo-referencing 1956 aerial imagery</p> <p>2.2 Complete the geo-referencing of 1956 aerial imagery along the coastal margin</p> <p>2.3 Produce a digital map of the 1956 aerial imagery showing the coastal margin</p> <p>2.4 Upload the 1950's coastal margin (aerial imagery) map onto the MSP GIS portal and a copy of the associated metadata onto the South Atlantic metadata catalogue</p>			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>3.1 Source the Satellite imagery for the Falklands and South Georgia</p> <p>3.2 Pre-processing of satellite imagery to prepare for analysis</p> <p>3.3 Undertake Analysis of the satellite imagery and habitat modelling</p> <p>3.4 Produce a Coastal Margin habitat map for South Georgia and the Falklands</p> <p>3.5 Upload the Coastal Margin habitat map onto the MSP GIS portal (for the Falklands) and supply SG map to GSGSSI (for upload to GSGSSI web portal); upload a copy of the associated metadata onto the South Atlantic metadata catalogue.</p> <p>4.1 Confirm Stakeholder workshop (to identify and prioritise spatial and temporal data priority needs expressed by Stakeholders) date, venue, and participants for the Falklands and South Georgia</p> <p>4.2 Confirm Stakeholder workshop programme, speakers and facilitators through consultations via the PMG and PSG for the Falklands and South Georgia</p> <p>4.3 Host the Stakeholder workshop for the Falklands and South Georgia</p> <p>4.4 Produce the Stakeholder workshop report for the Falklands and South Georgia and upload onto the project webpage</p> <p>4.5 Acquire very high resolution satellite imagery (e.g. WorldView) and/or undertake drone missions to acquire high resolution imagery for priority areas requiring fine-scale mapping in South Georgia and the Falklands</p> <p>4.6 Pre-process the imagery to prepare for analysis</p> <p>4.7 Undertake analysis of the imagery.</p> <p>4.8 Undertake ground-validation of analysed data on the Falklands and South Georgia</p> <p>4.9 Produce detailed (Stage II) Coastal Margin habitat maps for priority areas for South Georgia and for the Falklands</p> <p>4.10 Upload the detailed (Stage II) Coastal Margin habitat map onto the MSP GIS portal (for the Falklands) and supply to GSGSSI for upload onto the GSGSSI web portal. Upload a copy of the associated metadata onto the South Atlantic metadata catalogue.</p> <p>5.1 Draft a long-term coastal mapping/monitoring manual for the Falklands and South Georgia and upload onto the project webpage</p> <p>5.2 Confirm date, venue, and participants for the Falklands and South Georgia coastal mapping/monitoring training workshop</p> <p>5.3 Undertake coastal mapping/monitoring training workshop</p> <p>5.4 Record videos of training sessions and upload online onto the project webpage</p>			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>6.1 Review all of the existing (relevant) stakeholder groups and data creation and management initiatives and protocols.</p> <p>6.2 Produce a report on the review demonstrating how this initiative links to and builds on the existing and emerging work, and publish on the project webpage.</p> <p>6.3 Prepare for and host 'end of project' synthesis workshop to decide how outputs will be fed into planning</p> <p>7.1 Prepare monitoring and evaluation (M and E) plan</p> <p>7.2 Prepare and present 6 monthly M and E updates</p> <p>7.3 Upload M and E plan and updates onto webpages</p>			

3 Monitoring and evaluation plan

Activity	Indicator	Evidence/data required	Where evidence / data is to be sourced	Frequency How often will it be measured	Responsibility Who will measure it	Resources (time, £, staff, input from others)
Draft and sign Project Partners MoU	An MoU agreed and signed by all partners by end Quarter 4 FY 17/18.	Signed MoU document	MoU available on the SAERI Coastal Mapping webpage and on the project Trello site	Once, at June 2018 Project Management Group (PMG) meeting	Project Management Group (PMG)	Drafting to be led by project manager, with technical/contractual input by SAERI Deputy Director – Business and Programmes & Deputy Director - Innovation

Activity	Indicator	Evidence/data required	Where evidence / data is to be sourced	Frequency How often will it be measured	Responsibility Who will measure it	Resources (time, £, staff, input from others)
Hold Quarterly PMG meetings	A Project Management Group (PMG) meeting held every 3 months starting October 2017.	Minutes from PMG meetings	Approved PMG minutes are on the SAERI Coastal Mapping webpage and on the project Trello site. Draft minutes will only be available on Trello site	PMG meeting draft minutes will be available one month after meeting. Meetings are scheduled every three months.	Project Management Group (PMG)	Meeting to be chaired by SAERI Deputy Director – Innovation. Drafting of minutes by project manager.
Hold bi-annual PSG meetings	A Project Stakeholders group (PSG) meeting held every 6 months starting Quarter 4 FY 17/18.	Minutes from PSG meetings	Approved PSG minutes are on the SAERI Coastal Mapping webpage and on the project Trello site. Draft minutes will only be available on Trello site	PSG meeting draft minutes will be available one month after meeting. Meetings are scheduled every six months.	Project Management Group (PMG)	Meeting to be chaired by project manager. Drafting of minutes by project manager.
Monthly project webpage update	At least 1 project webpage created by end Quarter 4 FY 17/18, and at least 1 update to the page made every month.	Project information on webpage up to date	Project webpage	Monthly	Project Management Group (PMG)	Webpage to be created and updated by project manager.
Final project report and publicity	Final project report produced by March 2020.	Final report & related publicity	Report published on project webpage and disseminated to relevant stakeholders. Public outreach via twitter/Facebook and other local media	Once, at end of project	Project Management Group (PMG)	Report drafting will be undertaken by project manager – other project partners (OSU/JNCC/SMSG) leading on specific work packages will also deliver content in relation to that work package

Activity	Indicator	Evidence/data required	Where evidence / data is to be sourced	Frequency How often will it be measured	Responsibility Who will measure it	Resources (time, £, staff, input from others)
Explore development of a workflow to aid the geo-referencing 1954 aerial imagery	Commence geo-referencing of 1956 aerial imagery by Quarter 4 FY 17/18.	Evidence of attending project workshop with Oregon State University to discuss aerial imagery geo-referencing	Receipts demonstrating attendance at OSU in Jan 2017 & project meeting notes (7 th Feb 2018)	Quarterly	Project Management Group (PMG)	WP1 led by OSU. SAERI also contributing time.
Complete the geo-referencing of 1954 aerial imagery along the coastal margin	Complete geo-referencing of 1956 aerial imagery to create a digital map by end Quarter 2 FY 18/19	Geo-referenced 1956 aerial imagery layers	Available online via MSP webGIS	Twice: at end of Q2 FY 18/19 and at end of project	Project Management Group (PMG)	WP1 led by OSU. SAERI also contributing time.
Produce a Coastal Margin habitat map for the Falklands	Stage I habitat modelling and classification complete for the Falklands by September 2018.	FI coastal margin (Stage I) habitat map (Final raster habitat model outputs)	Available online via MSP webGIS	Once	Project Management Group (PMG)	WP2 led by OSU. SAERI, JNCC, SMSG & FIG also contributing time.
Produce a Coastal Margin (terrestrial & intertidal) habitat map for South Georgia	Stage I habitat modelling and classification (terrestrial and intertidal) complete for South Georgia by end March 2018.	SG terrestrial & intertidal (Stage I) habitat map layer (Final raster habitat model outputs)	In end of FY 17/18 Darwin Annual Report	Once	Project Management Group (PMG)	WP2 led by OSU. SAERI, JNCC, SMSG & GSGSSI also contributing time.
Produce a Coastal Margin habitat map for South Georgia	Stage I habitat modelling and classification (subtidal) complete for South Georgia, and integration with terrestrial and intertidal	SG coastal margin combined (Stage I) habitat map layer (Final raster habitat model outputs)	Map supplied to GSGSSI for upload onto the South Georgia GIS portal	Once	Project Management Group (PMG)	WP2 led by OSU. SAERI, JNCC, SMSG & GSGSSI also contributing time.

Activity	Indicator	Evidence/data required	Where evidence / data is to be sourced	Frequency How often will it be measured	Responsibility Who will measure it	Resources (time, £, staff, input from others)
	habitat maps by end July 2018					
Hold Stakeholder workshop and produce workshop report	At least 1 FI (Q3 FY 18/19) and 1 SG (Q3 FY 18/19) stakeholder workshop held to identify and prioritise data needs for the coastal margin	Workshop report	Report published on project webpage and disseminated to relevant stakeholders. Outreach via twitter/Facebook	Once	Project Management Group (PMG)	Report drafting will be undertaken by project manager – with contribution from other project partners
Undertake ground-validation exercises on the Falklands and South Georgia	Ground truthing of satellite imagery analysis on SG (Quarter 3 FY 17/18 & Quarter 4 FY 18/19) and the FI (Quarter 1 – Quarter 4 FY 18/19)	Ground validation dataset produced for inclusion within habitat model	Data will be subsumed with revisions to coastal habitat map layers, and evidenced in associated metadata and/or reports	Quarterly	Project Management Group (PMG)	The field expedition teams will be coordinated by the project manager. Will consist of SAERI staff and volunteers from the community.
Produce detailed (Stage II) Coastal Margin habitat maps for priority areas for South Georgia and for the Falklands	Stage II geospatial data products reflecting prioritized information needs utilizing high res imagery to reduce uncertainty in habitat models/classifications and address spatial and temporal data priority needs expressed by stakeholders – for both the FI and SG by Quarter 1 FY 19/20	Final raster habitat model outputs (Stage II) Coastal Margin habitat maps) for priority areas for South Georgia and for the Falklands	Available in final report and online via MSP webGIS or via GSGSSI webGIS.	Once	Project Management Group (PMG)	The development of Stage 2 maps is being led by OSU. SAERI, JNCC, SMSG, FIG & GSGSSI also contributing time.

Activity	Indicator	Evidence/data required	Where evidence / data is to be sourced	Frequency How often will it be measured	Responsibility Who will measure it	Resources (time, £, staff, input from others)
Draft a long-term coastal mapping/monitoring manual for the Falklands	A monitoring manual produced for long-term monitoring of coastal margin for the Falklands by end Quarter 3 FY 19/20	Coastal mapping/monitoring manual	Report published on project webpage and disseminated to relevant stakeholders. Outreach via twitter/Facebook	Once	Project Management Group (PMG)	Will involve Project Manager & project partners (especially FIG)
Draft a long-term coastal mapping/monitoring manual for South Georgia	A monitoring manual produced for long-term monitoring of coastal margin for South Georgia by end Quarter 3 FY 19/20	Coastal mapping/monitoring manual	Report published on project webpage and disseminated to relevant stakeholders. Outreach via twitter/Facebook	Once	Project Management Group (PMG)	Will involve Project Manager & project partners (especially GSGSSI)
Host a coastal mapping/monitoring training workshop	At least 1 face-to-face training workshop in implementing monitoring undertaken by end Quarter 2 FY 19/20	'videos' of training sessions produced	Available from project website	Once	Project Management Group (PMG)	Will involve Project Manager & project partners involved in training activities
Draft a brief report demonstrating how this initiative links to and builds on the existing and emerging data creation and management initiatives/protocols	New geospatial products maximally informed and integrated with existing FI and SG geo-spatial data initiatives	Report	Available from project website	Once	Project Management Group (PMG)	Project Manager leading

Activity	Indicator	Evidence/data required	Where evidence / data is to be sourced	Frequency How often will it be measured	Responsibility Who will measure it	Resources (time, £, staff, input from others)
Host 'end of project' synthesis workshop	End of project synthesis workshop for FI and SG held by end Quarter 3 FY 19/20 to decide how findings will contribute to systematic conservation planning	Results from 'end of project' workshop will be encapsulated within the Darwin Final Project Report.	Report published on project webpage and disseminated to relevant stakeholders. Outreach via twitter/Facebook	Once	Project Management Group (PMG)	Will involve PMG and project partners involved in the 'end of project' workshop
Prepare monitoring and evaluation (M and E) plan	Detailed Monitoring and evaluation plan produced by end Quarter 4 FY 17/18	M&E plan	Available from project website	Once	Project Management Group (PMG)	Project Manager
Ensure M&E is a rolling agenda item for PMG	6-monthly updates on implementation of M&E Plan provided to PMG	Review of M&E plan, recorded on version control table	Available from project website/PMG minutes	Bi-annually	Project Management Group (PMG)	Project Manager & PMG

Role	Responsibilities
Project Manager	The project manager leads on the day to day running of the project, including coordinating the project partnership, providing secretariat for the PMG and chairing the PSG. The project manager shall be accountable for the financial management of the Darwin project budget, and ensure the project is delivered on time and on budget.
Project Leader	The project leader will be responsible for the technical direction of the project and will be the main point of contact for Darwin. In addition, they shall be the person responsible for ensuring any grant meets the relevant Terms and Conditions. Finally, the Project Leader and their organisation are responsible for the health and safety of all staff working full and part time on their project.
Project Management Group (PMG)	Project Management Group (PMG) shall monitor and steer the project, ensuring it aligns with the project proposal document, and ensuring that the project delivers its outputs on time, and on budget. The PMG will also approve the Monitoring and Evaluation plan at the start of the project, and sign off its implementation throughout the project duration. Finally, the PMG provides high level decisions regarding any changes to the Project Management Plan, and will review relevant documents associated with this, such as the project risk register and the issues log.
Project Stakeholder Group (PSG)	The Project Stakeholder Group provides an advisory role, and is a forum to gather and assimilate the collective views about the project from across the various sectors within the Falkland Islands and South Georgia. It also allows the stakeholder community to contribute local knowledge and expertise to the project, ensuring that the resulting products are based on best available information and are 'fit for purpose'.

SAERI operates a strict data management policy for Darwin Plus projects, which this project shall comply with. This includes, but is not limited to:

- The provision of Research Permits from FIG and GSGSSI for research undertaken in respective Territories.
- The provision of metadata for project delivery data layers
- Submission of final datasets to Territories as required by the data management policy.

A more detailed guide to data management provision under this project can be viewed here: <http://www.south-atlantic-research.org/guide-for-researchers/d-data-management>