

Project Update form

If you have suggestions for improvement of this form, your feedback would be appreciated:

COUNTRY: South Georgia and the Falkland Islands

PROJECT TITLE: Seaweeds of the subtidal and intertidal habitats of South Georgia, including additions to the Falkland Island inventory.

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PROJECT UPDATE :

During the field survey of the north coast of South Georgia (November 2010) 16 intertidal and subtidal sites were visited where faunal and floral specimens were collected, preserved and documented. Additionally, in November 2010 a number of sites located on the east coast of the Falkland islands in the vicinity of the main town of Stanley were visited, and seaweed collections were made, adding to the inventory of a previous Falklands expedition in March 2010. All floral specimens were either chemically preserved (currently held with the Shallow Marine Survey Group) or pressed and are currently residing in the UK with Wells Marine. Any additional observations of habitat types, distribution patterns general levels of species richness and abundance were also fully documented photographically during this time. The preliminary findings have been recorded in the recently produced South Georgia expedition report which also documents all the surveys activities including methodologies, diving practices used and detailed accounts of the daily work schedule (See "SMSG South Georgia Expedition Report 2010.pdf" on CD). A report has been previously produced for the benthic marine algae of the Falkland Islands, including a species list, literature review of historic data records and analysis of species composition (See "Falkland Islands Seaweed Report 2010.pdf" on CD). Recent data collected in Stanley will be added to that inventory and analysis, and a similar report will be made for the recent South Georgia expedition It is anticipated that these reports will be submitted for publication either within Polar Biology or an alternative relevant journal within the next two months.

Remaining specimens are currently undergoing identification to produce a comprehensive species list as well as an archive of reference material that may be utilized in the future for the production of identification aids for subsequent field surveys and genetic studies. The pressed specimens are being labeled and suitably prepared for presentation within a herbarium. The Floral samples will be retained within duplicate herbariums to later be held with the Natural

History Museum, London and with the Government of South Georgia at King Edward Point Research Station (British Antarctic Survey).

HIGHLIGHTS and OVER-DELIVERY:

At this stage the project is thought to have been a complete success, producing an extensive reference collection of specimens many of which have not, until this time, been recorded within the shallow marine environment of the Falkland Islands or South Georgia, indicating possible extension of their distribution range, with some potentially new species to science. The six week field survey allowed all objectives of the survey to be accomplished within the designated time scale. The field survey covered an extensive area of the north coast of South Georgia from the far eastern to the far western tips of the South Georgia as well as a number of sites located on the east coast of the Falkland islands in the vicinity of the main town of Stanley. The experienced personnel involved enabled excellent data to be collected with the additional production of an image library to include not only quadrat photos but also high-quality *in situ* photos of much of the fauna and flora to later be used for identification guides. Settlement plates were successfully secured in 3 locations to enable future recruitment studies and detection of invasive species. This combined with the qualitative and quantitative transect data will provide valuable and timely baseline data for future studies and monitoring.

It is suspected that there is likely to be a richer diversity of flora and fauna than historical recorded due to the extensive range of habitats surveyed and the total number of species collected. The ubiquity of the large brown *Himantothallus grandifolius* was surprising, and clearly represents a major habitat forming species. There were numerous endemic species previously unrecorded and a number of cosmopolitan species that appear to be extending their southern distribution range, which may help with future studies of climate change or impacts of increased human activity in the area.

PROBLEMS and RESOLUTION:

As a whole the project did not encounter many problems. As with most diving related activities in remote areas all precautions were taken to ensure the safety of all personnel at all times. Problems with diving equipment were resolved quickly by the experienced technical services of the survey team such that they did not interfere with the survey schedule. However as with many field surveys the unpredictable weather interfered on occasion with the safety of the diving activity. Heavy fog and rough seas prevented safe and clear passage of the dive vessel to some sites, and fresh water run-off from glaciers and areas exposed to wave action resulted in high levels of turbidity and reduced in-water visibility. In such instances diving activity was aborted and where alternative options of field surveys were achievable such as intertidal surveys, these were substituted with great success. However, considering the location of South Georgia and the Falkland Islands and their relative exposure to inclement weather, fewer days of field surveys were lost to the environmental conditions than had been anticipated.

There were a number of logistical issues to work out while diving in South Georgia, such as transferring of gear from the main ship to the auxiliary dive boats. This was resolved by loading the dive boat into the water fully loaded with gear, and dive personnel boarding via the pilot's

ladder. Another issue to be addressed was the location and use of the laboratory on the main vessel, where samples could be easily and safely processed. The rental container fitted out with power and lab bench, remained secured to the front deck and provided an ideal environment from which to work. However, this was only useable during anchor, and in relative calm seas. There was little resolution to this except patience and persistence.

Due to the nature of floral specimens and the time restraints during field work it was difficult to identify many of the specimens during the trip. Those specimens considered too large for pressing were correctly identified at the time and recorded including details of site locations. Most remaining smaller specimens were successfully pressed and returned to the UK. There are likely to be a number of microscopic algae that due to their small size will not have been documented during collection and are unlikely to have been pressed. Such specimens include microscopic red, green and brown algae that only grow within the fronds of other algae. Historic literature suggests such species are limited in diversity within the geographic area studied and may not contribute significantly to the overall levels of species diversity. However, a main finding of the present study is that such presumptions are untrue; the microscopic algae should be targeted at a future date for further investigation.

Access to intertidal sites on South Georgia was by a small boat, where locations of intertidal sites were limited by access, time (tides), and the ubiquitous presence of highly territorial Antarctic fur seals. Within the Falkland Island the limited access by road and availability of alternative transportation restricted the sites to within the vicinity of Stanley. However, a number of sites were surveyed within these areas and consideration was given to include a variety of habitat types and differing environmental conditions to ensure a comprehensive species list could be produced.

INFORMATION: Is there any information to date that you would like to share with us (that can also be used publicly)

I ATTACH the following, by way of INFORMATION:

(Please ✓ tick appropriate boxes, and attached necessary information as necessary)

- Brief QUOTATIONS from the Project Manager / individuals involved with this project, which may be used freely by JNCC to promote and publicized the conservation achievements of this project through suitable media:**
- PHOTOGRAPHS or VIDEO CLIPS and full details of associated photo-credits, which may be used freely by JNCC and other OTs, to promote and publicized the conservation achievements of this project through suitable media.**
- A scanned copy and / or web-address of any NEWS ITEMS, PUBLISHED ARTICLES arising from this project.**
- A copy of any EDUCATIONAL MATERIALS, books, brochures, pamphlets or posters, arising from this project.**
- Details of any WEBSITE or WEBLINKS arising from this project.**
- Details of any COLLABORATION or PARTNERSHIP, local or international, which contributed to the success of this project.**
- Details of any other unexpected benefits arising from this project, such as CONSERVATION AWARDS, PUBLIC SUPPORT, VOLUNTEER PARTICIPATION or SPONSORSHIP.**

Photo credits and details

Photo number	Location	Credits
C10_6465	Possession Bay, Sth Georgia	Claire Goodwin, SMSG
C10_6563	Prince Olav Bay, Sth Georgia	Claire Goodwin, SMSG
C10_6991	Husvik, South Georgia	Claire Goodwin, SMSG
C10_7165	Stromness Bay, Sth Georgia	Claire Goodwin, SMSG
C10_7174	Stromness Bay, Sth Georgia	Claire Goodwin, SMSG
C10_7245	Stromness Bay, Sth Georgia	Claire Goodwin, SMSG
C10_7302	Stromness Bay, Sth Georgia	Claire Goodwin, SMSG
C10_7374	Stromness Bay, Sth Georgia	Claire Goodwin, SMSG
DSC_0141	Prion Island, Sth Georgia	SMSG
DSC_0376	Bird Sound, Sth Georgia	SMSG
DSC_0430	Stromness Bay, Sth Georgia	SMSG
DSC_0906	Husvik, Sth Georgia	SMSG
DSC_0927	Husvik, Sth Georgia	SMSG
DSC_0935	Husvik, Sth Georgia	SMSG
DSC_0969	Husvik, Sth Georgia	SMSG
DSC_8244	Bird Sound, Sth Georgia	SMSG
DSC_8336	Bird Sound, Sth Georgia	SMSG
DSC_8360	Husvik, Sth Georgia	SMSG
DSC_8364	Husvik, Sth Georgia	SMSG
DSC_8427	Husvik, Sth Georgia	SMSG
DSC_8592	Stromness Bay, Sth Georgia	SMSG
DSC_8807	Stromness Bay, Sth Georgia	SMSG
DSC_8888	Stromness Bay, Sth Georgia	SMSG
DSC_8929	Stromness Bay, Sth Georgia	SMSG
P1020466	Weed pressing, Sth Georgia	SMSG
PR02_Shallow_01	Prion Island, South Georgia	SMSG
STROM01_Deep_02	Stromness Bay, Sth Georgia	SMSG
STROM01_Shallow_01	Stromness Bay, Sth Georgia	SMSG
Stromness	Stromness Bay, Sth Georgia	SMSG

Collaborators and Partners

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Shallow Marine Surveys Group (<http://smsg-falklands.org>)

The British Antarctic Survey (<http://www.antarctica.ac.uk>)

Government of South Georgia and South Sandwich Islands (<http://www.sgisland.gs>)

Darwin Initiative (<http://darwin.defra.gov.uk>)

Falklands Islands Government (<http://www.falklands.gov.fk>)

South Georgia Heritage Trust (<http://www.sght.org>)

Shackleton Scholarship Fund (<http://www.shackletonfund.com>)