

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	DPLUS027
Project Title	Marine Spatial Planning for the Falkland Islands
Territory(ies)	Falkland Islands
Contract Holder Institution	South Atlantic Environmental Research Institute
Partner Institutions	Falklands Conservation, BirdLife International, British Antarctic Survey,
Grant Value	£151,572
Start/end date of project	1 July 2014 to 30 June 2016
Project Leader Name	Paul Brickle
Project website/Twitter/Blog etc.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning
Report author(s) and date	Amélie Augé, 30 June 2016

1 Project Overview



The Falkland Islands is an archipelago situated off the East coast of the southern tip of South America (Figure 1). The Islands are a UK Overseas Territory, and include both the land mass and a large declared Exclusive Economic Zone (EEZ). The Falkland Islands marine area (EEZ) is extensive and covers 463,897 km² from shallow coastal waters to deep-sea of more than 4,500m. The marine environment of the Falkland Islands was exploited for commercial whaling and sealing in the past and has now sustained commercial fisheries for several decades. It is, however, still a considerably untouched

part of the world, including many areas that remain in close to pristine condition. This is recognised by Falkland Islanders and the international community. The marine environment is very important to the Falkland Islands and its inhabitants because the current main economic activities are marine-based (commercial fishing and tourism) and people are closely linked to it for cultural reasons. The economic activities entirely rely on a healthy marine environment where fish can reproduce and grow and where wildlife attracting the tourists can thrive. Therefore, there is an intimate connection between managing the marine environment and ensuring the Falklands' economy is sustainable and people can enjoy their favourite coastal places, in the long-term future. With an increasing number and intensity of human activities occurring in the oceans around the Falkland Islands, in particular for oil exploration, but also for shipping traffic, commercial fishing, aquaculture, and tourism, the need to identify areas

sensitive to risks and to manage sustainably the marine environment has been identified as a priority for the Falkland Islands Government. The Islands Plan 2014-18 described the key actions that the current elected Government will take during their time in the Legislative Assembly. The Plan includes an action to “Implement appropriate [...] marine spatial planning frameworks to ensure the preservation and management of [...] marine environments of the Falkland Islands”.

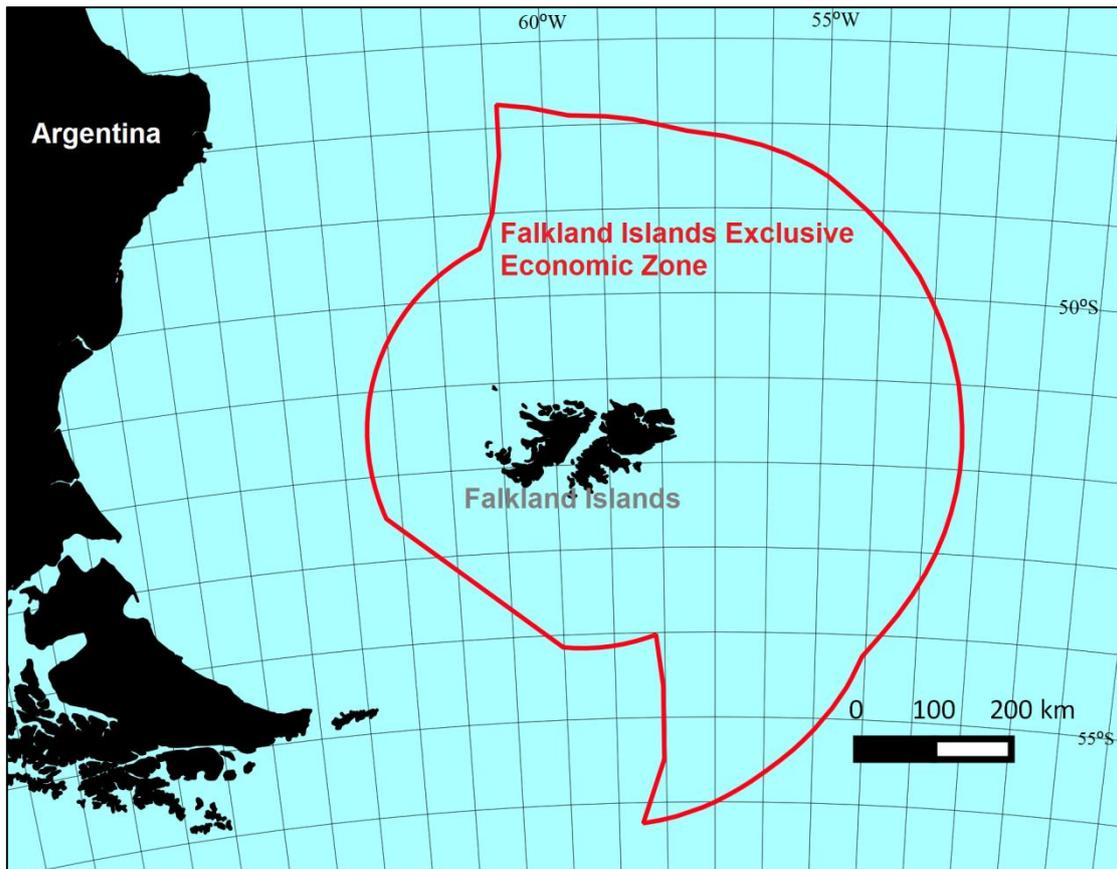
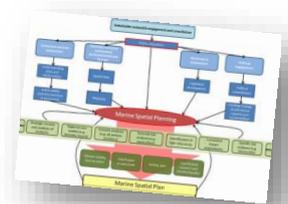
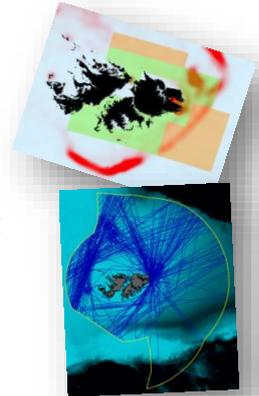


Figure 1. The Falkland Islands' Exclusive Economic Zone, locally called Conservation Zone

The Project Outcome Statement was “Falkland Islands have no legal framework of marine protected areas or strategic approach to marine spatial planning. The project will, through review, analyses and consultation, provide this framework, enabling the Territory to plan and manage the sustainable development and conservation of the marine environment around the Falkland Islands”. There is currently no marine spatial planning (MSP) around the Falkland Islands with the exception of spatial management of commercial fishing through annual fishing licenses including seasonal fishing closure areas and the exclusion of industrial fishing within 3 nautical miles from a baseline convex polygon around the islands. The Falkland Islands' EEZ is rich in marine biodiversity, including globally threatened seabirds and marine mammals. The need to identify and manage areas sensitive to risks of conflicts between different human uses and/or with marine wildlife and values has been identified as a priority for FIG. Marine Spatial Planning (MSP) is a tool used that can be used to identify and resolve these conflicts and ensure sustainable use of the marine environment, now and in the future.

The aims of the project were to initiate the process of MSP in the Falkland Islands with two main goals:

- **Mapping and analytical goal:** Identifying, analysing and mapping areas used by humans and wildlife, most important ecological areas and zones of conflicts. This goal involved gathering all available spatial data on the marine environment of the Falkland Islands and assessing the major data gaps for efficient planning. Data are mapped in a Geographic Information System (GIS) to work on spatial analyses for identification of overlap areas and areas of highest ecological significance. A sub-study of this goal was also to re-analyse together all satellite tracking and sighting data of seabirds and marine mammals available in order to identify the main data gaps for the management of this group of species. Another sub-study of this goal was to map the marine coastal cultural ecosystem services of the Falkland Islands in order to include these values in the MSP process framework.
- **Policy goal:** Involving local and international stakeholders in the initial MSP process and data gathering, and producing a framework for FIG to facilitate further steps towards implementation of MSP and associated legislation. This goal involved a large component of public consultation, communication and engagement with the local population and stakeholders and reviews of best-practice via literature reviews and workshops with MSP experts and local stakeholders.



The project contributed towards integrated marine management for the Falkland Islands at the same time as providing local capacity building in MSP through stakeholder engagement and public communication. The project addressed the highest priority areas within the Falkland Islands Biodiversity Strategy (FIBioS), particularly coastal and marine species and ecosystems. The project also contributed towards potential ratification of the Convention on Biological Diversity (CBD) by the Falkland Islands (this was officially announced on 29 June 2016) as it provides the means for FIG to identify potential Marine Managed Areas, including candidate marine reserves. The results of this project also provide guidance and act as a model for other UKOTs and small islands worldwide addressing MSP in the future.

Open-access computer programs (free and available for anyone to download from the internet and use) were used in this project to allow any interested stakeholders to look and access at the data and results. This also ensures that the data, references and information produced by this project can be available for use by anyone in the future, independently of access to expensive software.

2 Project Achievements

2.1 Outcome

This outcome was “Falkland Islands have no framework of marine protected areas or strategic approach to marine spatial planning. The project will, through review, analyses and consultation, provide this framework, enabling the Territory to plan and manage the sustainable development and conservation of the marine environment around the Falkland Islands“. This outcome set out in the original proposal was achieved (with a focus on MSP rather than MPA, from stakeholders’ direction). Evidence includes a range of documents (meeting minutes, workshop reports, databases, official public government papers etc.) all available to download from the MSP webpage. Descriptions of attendees to events are described in relevant reports.

Outcome achievement indicators			
	Baseline	Change by 2016	Source of evidence
Collation and availability of data	There is currently no facility in terms of data storage that will allow for the holistic analyses of these data. Currently data are held in multiple databases and spread sheets.	Marine data were gathered from different departments and organisations and collated in one database. All new data were also entered in the IMS-GIS Data Centre (33 datasets).	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#MSP%20GIS%20database Search the IMS-GIS data Centre for “Marine Spatial Planning”: http://south-atlantic-research.org/metadatalogue
Stakeholder information on potential approaches	The current OTEP funded protected areas project has provided reviews relevant mainly to terrestrial environments. The Shallow Marine Surveys Group conducted a review of marine protected areas in 2010 but did not review the models highlighted in section 21.	There were already many reviews available on MSP best-practice which were gathered and provided to stakeholders (by emails and links on webpage). Stakeholders attended a presentation where the most relevant models to the Falkland Islands were explained.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Links%20of%20interest%20about%20MSP <ul style="list-style-type: none"> • Collie JS, Adamowicz WL, Beck MW, et al (2013) Marine spatial planning in practice. Estuarine Coastal and Shelf Science 117:1–11. • Fletcher S, McKinley E, Buchan KC, et al (2013) Effective practice in marine spatial planning: A participatory evaluation of experience in Southern England. Marine Policy 39:341–348. • Kelly C, Gray L, Shucksmith R, Tweddle JF (2014) Review and evaluation of marine spatial planning in the Shetland Islands. Marine Policy 46:152–160.
Workshop for setting methodology	No workshops on MSP or MPAs have taken place in the Falkland Islands previously	The workshop “Setting the scene” took place 24-25 Nov. 2014 in the Falkland Islands with 16 local stakeholders, government representatives and scientists.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Workshop%20#1%20%E2%80%98Setting%20the%20scene%E2%80%99%20%E2%80%93%20November%202014
GIS database	A centralised GIS platform does not exist for the Falkland Islands.	A Marine Spatial Planning GIS database and related metadata catalogue were created. The MSP GIS project is also available online publicly as a prototype webGIS.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#MSP%20GIS%20database More on the webGIS http://south-atlantic-research.org/research/current-research/marine-spatial-planning#MSP%20Falklands%20webGIS%20-%20prototype%20coming%20soon%20in%202016!!
Mapping of megafauna key areas	Much work has been conducted but only reports at a species/population level. Studies investigating multiple species, habitats and their marine usage simultaneously in order to examine marine usage do not exist for the Falkland Islands	60 tracking datasets and 1 multi-year at-sea sighting dataset of seabirds and seals were gathered. A workshop took place 13-14 April 2015 to develop the methodology for analyses. Species density use layers were produced for 29 species and analysed to identify key areas for marine megafauna.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Key%20areas%20for%20marine%20megafauna

Workshop for developing MSP tools	No workshops on MSP or MPAs have taken place previously	The workshop “Developing the tools” took place 16-17 April 2015 in Cambridge, UK, with 7 Falklands government and stakeholder representatives and 15 UK-based MSP experts.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Workshop%20#2%20%E2%80%98Developing%20the%20tools%E2%80%99%20%E2%80%93%20April%202015 Workshop report available for download on the above page
Bio-regionalisation analyses	This approach covering the entire marine environment has not been conducted for the Falkland Islands	Data gathered were analysed, formatted and mapped for use in MSP, in particular shipping data, seabird and seal breeding colonies, whale sightings, marine biosecurity risk areas, geomorphology	The webGIS provides public access to the resulting mapping; several stakeholder, and requests for data and maps have already occurred. Maps of overlap were produced and provided to some stakeholders for voluntary (eg. Royal Navy gunnery exercises). Maps depicting area also displayed in the various report provided to stakeholders, highlighting in particular areas of between marine values and activities.
Workshop for framing the MSP process	No workshops on MSP or MPAs have taken place in the Falkland Islands previously	The workshop “Farming the process” took place 5-7 April 2016 in the Falkland Islands, and was attended by 25 local marine stakeholders and government representatives, along with 3 international experts.	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Workshop%20#3%20%E2%80%98Framing%20MSP%E2%80%99%20%E2%80%93%20Upcoming%202016
MSP framework proposed to government	Despite the known rich levels of marine biodiversity and known areas of high conservation value, no marine areas have yet been formally designated and so are in need of legal protection, in the Falkland Islands.	The stakeholders preferred a holistic MSP approach; therefore efforts were made in developing a framework for MSP and ensuring political support for its implementation. Two papers were submitted to the Governmental Committees and the Executive Council, along with presentations given.	The first Executive Council paper can be downloaded here: http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Government%20supports%20the%20creation%20of%20MSP%20process%20and%20Plan%20-%20December%202015 Presentations given to: Environmental Committee (19/02/15; 29/10/15) Fishery Committee (3/12/15) Selected members of the Executive Council (12 and 13/11/15)

2.2 Long-term strategic outcome(s)

The Falkland Islands Government has already embedded MSP in its Island Plan 2014-18. This Darwin Plus project provided the foundation for implementing this commitment in the Falkland Islands. The project demonstrated the importance of MSP for sustainable development and for safeguarding of the natural marine environment of the Falkland Islands, which provide the islands with crucial ecosystem services. The long-term strategic outcomes were to create spatial resources for MSP and to provide an MSP framework recommendation to ensure that the government and stakeholders adhere to the need of implementing MSP in the Falkland Islands. As a result of this project, MSP is now a concept better understood by local stakeholders and the Government; with an official recognition by the Government of the importance of implementing MSP and commitment to creating the first Marine Spatial Plan.

The three main components demonstrating the project's achievements are:

1. An established MSP GIS database and its metadata catalogue containing all baseline data and maps necessary for MSP, which also provided a mean to identify critical data gaps (all new datasets were entered and stored in the Falklands' [IMS-GIS Data Centre](#)). These were designed to be easily managed for addition of new and updated datasets in the future, and include an online webGIS, displaying a set of maps, accessible to all stakeholders, regardless of their GIS skills or knowledge.
2. Local marine stakeholders have all been informed of the needs for and potential benefits of MSP, and provided with reviews and examples of successful MSP implementation, via public communication and workshops. This resulted in significant capacity building within the islands on this topic, and awareness of the need of co-ordinated marine management to ensure protection of the natural marine environment.
3. The FIG's Executive Council agreed that MSP is important for marine sustainable development and have committed to the support of the MSP process and the creation of the first Marine Spatial Plan according to the framework produced during the project and submitted to the Council.

The project has, consequently, had significant impacts on the way local stakeholders and government perceive marine management and the need for an MSP approach towards ecosystem-based management, for sustainable development. The multiple workshops and numerous public communications provided many opportunities to educate stakeholders and the public on MSP and the importance of the marine environment for the Falklands' people and economy. The regular steering committee meetings provided a platform for updates to the key stakeholders and directives from this group on the best way to move forward with implementation of MSP. The political engagement and discussion (via individual meetings with Member of the Legislative Assembly and Executive Council papers) also demonstrated that the project influenced wider decision making and helped embed environmental issues at large into decision making in the contexts of an ecosystem-based management and of the importance of healthy marine habitats for cultural and economic values of the islands, now and in the future.

Due to the successful stakeholder and government engagement, the project has delivered results that are of high value for money. Stakeholders and government staff voluntarily attended meetings and workshops, read documents and provided feedbacks. This alone not only demonstrated their interest, but also constituted a large in-kind contribution to the project with at least 1,446 hrs spent on the project voluntarily across all stakeholder meetings. This was calculated from the steering committee meetings (2 hrs each with 8 people attending, 9 occurrences so 144 hrs), workshop #1 (2 days or 12 hrs with 19 people attending so 228 hrs), workshop #2 (2 x 1.5 days or 21 hrs with 22 people attending on average so 462 hrs), workshop #3 (3 days or 21 hrs with 25 people attending so 525 hrs), and individual meetings with steering committee members and local stakeholders (87 hrs). This is the equivalent of a minimum of approximately £25,000 of in-kind salary committed to the project from stakeholders and FIG for contact time alone, with likely at least half as much for reading and commenting on documents individually.

As part of output 5 'Data analyses' of marine megafauna distribution, great effort was made to gather tracking and sighting data from previous studies conducted in the Falkland Islands, or elsewhere when animals came to the Falklands' waters. The response to request of providing data for the analyses was very successful. It is hard to quantify the monetary value of such a dataset but it is likely over hundreds of thousands of pounds (due to the high-cost that data owners have incurred in obtaining the data). This therefore demonstrates a high value for money of the results and data now available for FIG to make decision for environmental management.

The IMS-GIS Data Centre (a project funded by the JNCC/Foreign Commonwealth Office) and the MSP Darwin Plus project complemented each other and provided added value for both projects. The MSP project provided funds to the IMS-GIS Data Centre to develop further the infrastructure of the Centre so they could provide a long-term data repository where stakeholders and other interested parties could request data produced as part of the MSP project. The IMS-GIS Data Centre developed a webGIS platform that can now be used for

other projects; the MSP project provided data and the MSP-GIS project to use as the first trial to develop this tool. The IMS-GIS Data Centre was tasked to set up the MSP webGIS from these data and project which gave both projects a great innovative output. Staff on both projects also collaborated on a number of sub-projects where complimentary expertise provided added value (eg. preliminary marine biosecurity risk area analyses).

The Darwin Plus project provided assistance to, fed into and collaborated with a range of other UKOTs and European projects and initiatives. Examples within the Falkland Islands are:

- EU BEST III with marine Key Biodiversity Area designation – Spatial and species data were provided and advice given
- Gap project (Addressing priority gaps in understanding ecosystem functioning for the developing Falkland Islands offshore hydrocarbon industry) – Spatial data were provided, field expertise was contributed, workshop collaboration took place when possible
- JNCC/Foreign Commonwealth Office-funded project, the IMS-GIS Data Centre (see paragraph above)

Examples outside of the Falkland Islands included:

- Ascension Island MPA development: Project staff attended the workshop and provided advice
- The two workshops conducted in Cambridge, UK, provided a venue to bring together an international group, in particular with UK expertise, that fostered collaborations
- Cross-island model for MSP with advice provided by an established successful MSP process, the Shetland Islands

Value for money is also proven in the above outputs and outcomes set out in the original proposal. Due to savings in workshop costs (by sharing cost with another project requiring inputs from the same participants, for instance) and the many extra hours from the dedicated project team, it was possible to conduct several small sub-projects that provided new critical datasets for MSP that were identified as data gaps for MSP through data review and the first two workshops. These sub-projects included mapping coastal [cultural values](#), mapping coastal [kelp beds](#), mapping [recreational boating](#) areas, identifying [biosecurity risk](#) areas, creating a spatially-explicit [cetacean stranding](#) database for FIG, and developing a [research proposal](#) to fill in a larger critical data gap on near-shore cetaceans for the next round of Darwin Plus. All these sub-projects were completed during the lifetime of the project and provided large added value to the project. All data produced are available for further studies and management.

A proposal to conduct a small study on [baleen whale distribution](#) to feed into MSP was also written as part of the project and submitted to the FIG Environmental Planning Department for an Environmental Studies Budget grant. The grant was successfully secured in February 2015 (£15,000 for 6 months) and a second small grant for complimentary work in September 2015 (£3,860 with matched funds from SAERI). This demonstrated further commitment to the project by FIG. A research assistant was employed for the period to conduct the study within the Darwin Plus project. Hotspots of whale sightings were mapped, along with distribution predictions based on Species Distribution Models.

All the sub-projects assisted in raising the profile of the project and the benefits that MSP could have for the islands, including within the local community. With trips to the remote settlements for the cultural coastal values and the baleen whale sub-projects, several [public presentations](#), and numerous articles published in the local newspaper, for relatively small costs, the project was well disseminated.

2.3 Outputs

All outputs set out in the original application were completed before the end of the project, except the peer-review scientific publication on the key areas for marine megafauna. This publication is in progress and will require more time to complete due to the large number of co-authors involved and the peer-review process. The outputs included the provision of GIS tools for initiating MSP, and these have all been provided to the Falkland Islands Government. A framework was also completed and approved by stakeholders. Along with the [paper](#) submitted to FIG committees and Executive Council, it provides the way forward for implementation of MSP in the Falkland Islands.

Output	Baseline	Change recorded by 2016	Source of evidence	Comments (if necessary)
Output 1 Increased data availability.				
Indicator 1.1	No list and descriptions of marine data useful for MSP	MSP metadata catalogue (Excel file); 70 datasets	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#MSP%20GIS%20data%20base	More will be added in the next months as sub-projects are completed
Output 2 Best Practice Review				
Indicator 2.1	Stakeholder and project partners not informed on MSP best practice	22 local stakeholders informed on MSP examples and best-practice	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Workshop%20#1%20%E2%80%98Setting%20the%20Scene%E2%80%99%20%E2%80%93%20November%202014 (22 different stakeholders attended the public consultation and/or the workshop).	This was conducted as presentations with already existing reviews printed and provided
Output 3 Stakeholder workshop 1				
Indicator 3.1	No MSP workshop in the Falkland Islands	MSP workshop #1 report written, distributed and published	http://south-atlantic-research.org/media/files/MSP%20Workshop%231%20report%20Setting%20the%20scene_%2024-25%20November%202014.pdf	Stakeholders agreed to MSP holistic approach
Output 4 GIS platform				
Indicator 4.1	No MSP specific database	MSP GIS database (QGIS project) created; all 70 datasets mapped	See pages 5-6 in the report: http://www.south-atlantic-research.org/media/files/MSP_Falklands_Framing-Workshop-report_5-7_April_2016_FINAL.pdf	More datasets will be available in July and August as sub-projects are completed
Output 5 Data analyses				
Indicator 5.1	No holistic analysis of all existing data on seabirds and seals	Obtained 67 individual tracking datasets, total 15,438 locations for 21 species; all seabird ones were added to the BirdLife database through this work; and 1 at-sea sighting dataset, total >160,000 points	See list of tracking datasets pages 36-42, and methodology described pages 19-21, on the workshop report http://south-atlantic-research.org/media/files/MSP_Falklands_Megafauna_workshop-report_13-14_April_2015_FINAL.pdf And page 8 (draft key areas) in report http://www.south-atlantic-research.org/media/files/MSP_Falklands_Framing-Workshop-report_5-7_April_2016_FINAL.pdf	The scientific publication will be submitted in August or Sept. following co-authors' approval

Output 6 Stakeholder workshop 2				
Indicator 6.1	No MSP workshop in the Falkland Islands	MSP workshop #2 report written, distributed and published	http://south-atlantic-research.org/media/files/MSP_Falkands_Developing-the-tools-Workshop-report_16-17_April_2015_FINAL.pdf	This also provided 7 Falklands' stakeholders' direct interactions with MSP experts as part of local capacity building
Output 7 Data analyses 2				
Indicator 7.1	No global maps for bioregionalisation of the Falklands' EEZ	Series of maps produced for environmental, human activities data, and creation of a webGIS, open access.	See maps pages 36-49 in report http://www.south-atlantic-research.org/media/files/MSP_Falkands_Framing-Workshop-report_5-7_April_2016_FINAL.pdf And the webGIS http://148.251.4.143/saeri_lm3b_eta3/lizmap/www/index.php/view/map/?repository=saeri&project=webGIS20160318	
Output 8 Stakeholder workshop 3				
Indicator 8.1	No MSP workshop in the Falkland Islands	MSP workshop #3 report written, distributed and published	http://www.south-atlantic-research.org/media/files/MSP_Falkands_Framing-Workshop-report_5-7_April_2016_FINAL.pdf	
Output 9 Strategy for MSP				
Indicator 9.1	No policies or long-term coordinated marine management in the Falkland Islands	Falkland Islands Government acknowledged importance of MSP and agreed to create first Marine Spatial Plan in a next phase of MSP	http://south-atlantic-research.org/research/current-research/marine-spatial-planning#Government%20supports%20the%20creation%20of%20MSP%20process%20and%20Plan%20-%20December%202015 Policy paper submitted to FIG can be downloaded at the link above.	Head and senior Policy Department staff were contacted but felt that their department did not have to feed in the current phase of MSP

The project did not encounter major problems, anticipated or unexpected. There was only one identified risk ("Some of the collaborators are unable to make one or more workshops"), in the engagement of stakeholders that happened. Unfortunately, one of the major local stakeholders, the tourism industry, had difficulty engaging in the project due to the lack of staff and time. A representative sat on the steering committee but was unable to attend most meetings or workshops. This event led to a lower representation of tourism industry interests in the discussions but it did not affect the project or its outcomes. Other stakeholders and the project team (including individual meetings with tourism representatives) were able to ensure that the values of this group were taken into consideration.

A risk that emerged was the lack of interest or opposition to aspects of MSP by some stakeholder groups or the government (in particular regarding marine protected area). The proposal suggested that an MPA might be proposed by the end of the project. It became clear from the onset of the project that local stakeholders and FIG wanted marine management to focus on a holistic management approach and that an MPA itself should not be the aim of the initiation of MSP and the framework for it in the Falkland Islands. Instead, a best-practice MSP process, involving a wide range of stakeholders and identifying management issues and potential solutions through MSP was developed. This is a stakeholder-led process, with a focus on science based evidence for management. MPAs may emerge from MSP but this is only one of the management measures.

2.4 Sustainability and Legacy

This initiative has provided a legacy that will endure beyond the end of the project. For example, the database created and the webGIS were designed as long-term tools that can be used by government and stakeholders for decision making. These will be available beyond the end of the project, and SAERI has committed to their long-term upkeep. All the new data created are also made open-access so they can be used for decision making and further studies. All new data, or data gathered as part of the project, were entered in the IMS-GIS Data Centre, a long term data repository for the South Atlantic UKOTs. There have already been several data requests made by government staff, stakeholders, and researchers, and data were provided to them for improving EIA, decision making and ecological studies.

Several steps were taken to ensure the impact of the project would endure after the project finished. These included the numerous stakeholder and government engagement and education on MSP to provide local capacity building in the field. Submissions of several information and decision papers to FIG committees and Executive Council also contributed to consolidating political support for MSP and its implementation. The FIG Executive Council has agreed to support the MSP process and the creation of the first Falkland Islands Marine Spatial Plan. The MSP project has provided all necessary tools and a proposed framework to them, for implementation. Political engagement received much effort to ensure appropriate influence and clarification of the aims of MSP (versus solely establishing a Marine Protected Area as perceived at the start of the project by some stakeholders).

Efforts (made in the documents mentioned above) to demonstrate the importance to FIG of keeping the momentum provided by the Darwin project have resulted in FIG agreeing to provide £35,000 to continue the MSP process in the short-term. There are also early indications that further funding will be made available to support this process going forward. The resources (computer, camera, dictaphone, office equipment etc) purchased under this Darwin project will remain at SAERI for potential future work on MSP. The project manager's employment will be extended for 5 months after the end of the Darwin project to continue to progress the MSP process.

A number of critical data gaps in knowledge for efficient MSP were identified during the project. Some were addressed during the lifetime of the project as added value (eg. historical whale study, coastal cultural value and kelp bed mapping) but others will require further funding for research. SAERI is working towards addressing some of these research gaps as part of its future research initiatives. For example, some remaining data gaps were related to near-shore cetacean distribution and coastal benthic mapping, and funding was sought. The project staff worked on a proposal for a new Darwin Plus project on coastal dolphin distribution (successful proposal), and also initiated and were then involved in providing guidance and advice in another successful proposal for coastal whale distribution (submitted to EU BEST scheme) that will be led by another UKOT-based organisation. Research partners have also taken on to work on potential projects covering benthic habitats (including through a PhD studentship).

3 Project Stakeholders/Partners



Stakeholders and guest delegates on board HMS Clyde during MSP workshop (Photo credit: Chris Locke)

Stakeholders were involved throughout the project. Several stakeholders were research partners on the project application and, therefore, participated in its original planning. All the research partners and representatives of other main local marine stakeholders were also invited to sit on the project's steering committee. This committee was made of representatives of the following groups:

Falkland Islands Government:

- Fisheries Department
- Environmental Planning Department
- Mineral Resources Department

Industry:

- Falkland Islands Tourism Board
- Falkland Islands Fishing Companies Association
- Falkland Islands Petroleum Licenses Association

NGOs (local and international):

- BirdLife International
- Falklands Conservation
- Shallow Marine Surveys Group

Military:

- Royal Navy

International research organisation:

- British Antarctic Survey

The committee met every 3 months from the start of the project. A quarterly report was produced and sent to the committee members prior to each meeting, and meeting notes were also written and sent for feedbacks before being published via the project webpage. These quarterly meetings, along with individual meetings, provided opportunity to ensure the stakeholders were involved in planning and decision making of the project.

Involving overseas stakeholders in the steering committee was challenging due to the limited internet on the islands, and the expensive teleconference facilities (not budgeted in the original proposal for steering committee meeting). Stakeholders based overseas joined the steering committee on skype. They, however, expressed the difficulties they had in following the discussions and recommended that future projects budget for use of the teleconference facilities for meetings. Stakeholder engagement throughout the project was, however, very successful and the workshops, in particular, provided in-person interactions between local Falkland Islands stakeholders, overseas stakeholders and MSP and scientific experts.

The project provided a successful platform to establish and develop long-term connections between small islands, notably the Shetland Islands and Ascension Island (representatives of both islands attended the third workshop in the Falkland Islands). These connections are now allowing for cross-island knowledge and skill sharing, in the long-term.

Stakeholder fatigue was another challenge that was mentioned by the local stakeholder representatives on several occasions. On the Falkland Islands, as on other small islands, the community are consulted regularly on a range of issues (not only environmental). It was recommended that projects should be co-ordinated within the islands to ensure the demand on representatives do not preclude them from being involved in important consultations and decisions.

4 Lessons learned

The management of this project did not present major issues, but some lessons and challenges emerged. The project management structure was generally suitable for this style of project; however, it would have benefited from separation of project management and project engagement functions in the steering committee. This steering committee should have been limited to a maximum of 4 selected members with focussed expertise in the topic and tasked with overseeing the project delivery. This would have been complimented with a local stakeholder steering group tasked with providing feedback and ensuring the project provided the right tools for the islands. It is, therefore, suggested that this type of projects (developing science-based management tools) should have a small steering committee (individuals that remain on the committee even if they change position or organisation) and a stakeholder committee (made up of organisations with representatives attending). This would require more time for organising, conducting and reporting on meetings but would make the project more efficient in terms of ensuring stakeholder support, as well as project steering and monitoring.

There was the right expertise employed on the project, including from research partners and collaborators, and for short research assistantships. The project was planned enough to be developed successfully and the problems were well identified, at the exception of stakeholder engagement and perception. Marine spatial planning is a stakeholder-led process and therefore a large part includes stakeholder education and engagement. It would be important for similar projects to ensure that time and resources are properly allocated in the budget and plan to have sufficient ability to meet with stakeholders and ensure that they are aware and supportive of the process (or give the means to convince them if they are not, as such project may encounter negativity). The timeframe of the project was partly unrealistic, in particular due to the lack of consideration of this stakeholder element in the proposal. Success of the project relied on many extra hours to ensure results and outcomes were fulfilled, but a more focused project application with clearer indicators and final outputs would have helped in reducing stress and provide a better work balance for the project team.

Project staff had pivotal roles in the project, and therefore any changes to personal circumstances for the individual (in particular in the management role) will inevitably have an impact on the project. All potential unforeseen circumstances (including medical¹) should be identified and mitigated in the project risk assessment. SAERI will be including this line in their risk assessments for future projects and indeed will explore with the Darwin Initiative what latitude there is for project extension and modification to accommodate cases of changes in personal circumstances.

4.1 Monitoring and evaluation

The project design was slightly changed following feedback from the steering committee early on in the project. It was recognised that MSP was about holistic management of the marine environment and that solely focusing on establishing an MPA at a pre-definite site should not be the sole aim of the project. Therefore, the framework of the project was slightly changed to work towards an issue / threat-based approach to MSP.

No online project management system was used (the use of new, additional programmes is not necessarily the best approach with local stakeholders). The use of emails to disseminate agenda, reports etc. and their publication on the project webpage was found to work well, and provided a useful platform for stakeholders to provide feedback.

¹ All future projects should have as risk "long-term medical leave is required by a project staff" with a low likelihood but a high impact, with steps to reduce risk being having a clear plan in this event to ensure both the project officer well-being and flexibility in the project to accommodate for the staff absence (at an outcome and institutional level).

The monitoring and evaluation was continuous with the high level of engagement with stakeholders and government representatives in the quarterly project reports, steering committee meetings, and the published notes from this meeting. All documents were submitted for comments to the steering committee and the workshop participants before being finalised. They were then made publicly available via the project webpage to ensure evaluation across the islands' community.

Four scientific papers emerging from the project are under progress and have been or will be submitted for peer-review in international journals. These are:

1. A multi-species analyses to identify key areas for marine megafauna
2. Use of local ecological knowledge to investigate endangered baleen whale recovery in the Falkland Islands
3. Sub-polar isolated islands: Frontiers for ocean management?
4. Eliciting Cultural Coastal Values in a remote Archipelago: Participatory mapping in the Falkland Islands to inform Marine Spatial Planning

4.2 Actions taken in response to annual report reviews

All aspects mentioned by the reviewer of the annual report were addressed, explained or corrected. One of these aspects concerned the GIS platform used. The links provided in the outcomes and outputs evidence show that the GIS platforms were well under way by the first annual report (9 months from start of project) and were completed within datelines as per project application.

It would be recommended that reviewer of annual reports for similar types of projects (e.g. when one output is to create a large complex database) take into consideration that the creation of a large spatial database is a tenuous and long process and that it may not be possible to fully provide evidence of its progress half-way through its establishment (at the default of spending many days of non-productive work on creating draft documents solely to show in the annual report).

As recommended by the reviewer of the annual report, time spent on the scientific publications was reduced and instead more time was spent on public and stakeholder communication. This led to successful and extensive public communication campaigns including talks, newspaper articles, TV, and radio interviews within the islands. Unfortunately, this meant that there was no time to complete scientific publications within the timeframe of the project though there is a commitment from project staff and research partners to complete at least three of them after the end of the project.

5 Darwin Identity

The project received significant publicity locally and internationally. The Darwin Initiative was clearly acknowledged at each event and in each publication, including with logo, and verbal acknowledgments. The Darwin project was communicated in:

- 7 articles written for the local newspaper (see list on this [webpage section](#))
- 5 scientific presentations by project staff at international workshops, conferences, or at international organisations (see list and details on this [webpage section](#))
- 1 community outreach effort to interview local residents (in person) and later disseminate results (by mail) of two MSP sub-projects throughout the islands (see the printed pamphlet distributed to potential interviewee at this [link](#)). Over 60 different local residents were interviewed.
- Over 30 tweets were created and published on the @SAERI_FI twitter account, all linked to the Darwin_Defra account, and receiving in total over 200 hits
- 11 blog posts from project team (see list and links to posts on this [webpage section](#))

- 6 public presentations from project staff and workshop guest speakers within the islands (examples of advertisement below).



The South Atlantic Environmental Research Institute (SAERI) presents...

Rachel Shucksmith, University of the Highlands and Islands, Shetland Islands, who will give a public talk called:

**Shetland Islands archipelago:
Exploring its unique marine wildlife,
culture and local management**



**When: Tuesday 5 April at 5.30pm
Where: Chamber of Commerce**



The Shetland Islands are the UK's most northerly and remote inhabited island group. Shetland resident Rachel Shucksmith will be talking about the islands' spectacular marine wildlife and scenery, including seabird colonies, otters and underwater marine life, and marine heritage. She will also be exploring how local management of marine resources has enabled the Shetlands to maintain thriving marine industries, including fisheries, aquaculture and oil, alongside burgeoning recreational activities and abundant marine wildlife. Rachel is managing the Shetland Islands marine spatial planning.




The South Atlantic Environmental Research Institute (SAERI) presents...

Denise Herrera and Veronica Frans, from SAERI, who will give a joint public talk called:

**Where the wild things are:
Mapping people's favourite coastal areas and
historical whale sightings in the Falkland Islands**



**When: Thursday 28 April at 5.30pm
Where: Chamber of Commerce**



Marine Spatial Planning (MSP) is a management process that will enable the Falkland Islands to manage marine activities in a coordinated manner to ensure the economic, ecological and cultural values obtained from the sea are safeguarded. Denise and Veronica are working on two projects that are providing new spatial data to feed in the MSP process: mapping cultural values and mapping whale recovery and hotspots. Denise will present results of where the community's favourite coastal places are and why. She explored where hotspots are and looked at how attached as a whole the community was to these hotspots. Veronica will present the results on distribution of whale sightings around the islands and how numbers of sightings have changed since the 1940s. They both interviewed people in the community, in camp and in Stanley, and are excited to present the results of the analyses from these interviews.



The Darwin Initiative support was recognised as a distinct project with a clear identity as funding the Initiation Phase of MSP and providing the recommended framework, but was also put in the context of the long-term MSP process in the Falkland Islands and as the precursor to a potential future MSP research program at the host institution. The stakeholders involved in the project should now all have a good understanding of the Darwin Initiative, in particular of the UKOT's Darwin Plus concept.

6 Finance and administration

6.1 Project expenditure

This is a preliminary budget as the project ended 30 June of June when this report is submitted and final costs such as for salary, transport (return flight), payment of annual leave not taken etc, will have to take place in the next month. Some costs to be incurred in the next month were, therefore, estimated.

Project spend (indicative) since last annual report	2015/16 Grant (£)	2015/16 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs			+2.57	
Consultancy costs			0	
Overhead Costs			0	
Travel and subsistence			-14.01	One UK-based workshop participant had to cancel his attendance last minute and the costs were not incurred
Operating Costs			+1.95	
Capital items			-110	External hard drive needed for storage
Others			-13.28	Lower costs for workshop mostly than expected due to contributions from stakeholders (eg. one day hosted on a ship free of charge, including food)
TOTAL	90,825	87,690.62	-3.45	

Project spend (indicative) since last annual report	2016/17 Grant (£)	2015/17 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs			+22.62	Project manager was unable to take 23 days of annual leave before end of project and these are paid out at end of contract which increase costs for this line,
Consultancy costs			0	
Overhead Costs			0	
Travel and subsistence			+101	The return flight was under estimated and some expenses were incurred for the UK trip in April to attend MPA workshop and promote the project (these were originally planned for late March).
Operating Costs			-72.31	There were less costs than expected for this last phase of the project as everything for the GIS database and webGSI had been set up earlier
Capital items	x	110	+110	Extra external hard drive needed for storage after end of project
Others	0	0	0	
Audit fee	1,500	1,500	0	
TOTAL	14,243	16,405.22	+15.18	

Staff employed (Name and position)	Cost 2015/16 (£)	Cost 2016/17 (£)
Amélie Augé (project manager)		
Denise Herrera (research assistant cultural values)		
Ben Lascelles and Maria Dias (BirdLife International data specialists and tracking analysts)		
TOTAL	45,422.26	12,314.43

Consultancy – description of breakdown of costs	Other items – cost (£)
TOTAL	

Capital items – description	Capital items – 2015/16 cost (£)	Capital items – 2016/17 cost (£)
External hard drives (1 or 2TB)		
TOTAL	110	110

Other items – description	Other items 2015/16 – cost (£)
2 days cover for supervision of research assistants' fieldwork during project manager hospitalisation	
IMS-GIS Data Centre webGIS expertise, training and settings	
Kelp bed mapping short assistantship	
Logistical assistance for workshops #3	
TOTAL	7,371.32

6.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Environmental Studies Budget (FIG) – mapping whale sightings for MSP	
Environmental Studies Budget (FIG) – predicting whale habitat for MSP	
SAERI in-kind - predicting whale habitat for MSP	
TOTAL	22,720

Source of funding for additional work after project lifetime	Total (£)
FIG – Secured funding at the time of writing of this report	
TOTAL	30,000

6.3 Value for Money

The project was high value for money. With the major costs of the project being the manager's salary and the workshops, this project produced a large amount of outputs that, in total are likely to be valued in the hundreds of thousands (in particular in data now available for decision making and the next step of MSP, as explained for instance for the marine megafauna data in section 2.2 of this report). All workshops were conducted with cost savings, in particular the second workshop where costs were shared with another SAERI project that required similar attendees and therefore workshops for the two projects were co-ordinated and shared the costs of the transport, subsistence and venue (in total this saved approximately £3,000, re-allocated to the sub-project 'Mapping cultural coastal value').

Other aspects of value for money were detailed in section 2.2 of this report, and include in-kind time from project partners and stakeholders, free access to extensive expensive datasets for analyses and mapping, and successful proposals for future work towards MSP.

Shipping traffic data (crucial data for MSP) were unavailable before the project. The project has allowed for the first acquisition of shipping traffic. The quote from consultants for acquiring this type of data was over £5,000. The project provided these data for a small cost of a few days of salary for discussion and programming to obtain a 2-year dataset of shipping traffic in the Falklands' waters (acquired from the start of the project). This is further evidence of great value for money provided by the project. The mapping of kelp beds all around the islands also showed evidence of high value for money. The use of freely available satellite imagery and manual mapping provided a map of coastal kelp beds that would have costed tens of thousands pounds if satellite imagery were bought for automatic mapping with image classification.



Rockhopper penguins and ships in Berkeley Sound (Photo credit Nathan McNally)



Well attended public talk by Rachel Schucksmith on MSP in the Shetland Islands as part of the Marine Spatial Planning 'Framing the process' workshop in Stanley, Falkland Islands, in April 2016.



Commerson's dolphins and the local delivery ship in Port Howard (Photo credit: Amélie Augé)



*The coastline on West Falkland (Hill Cove) with islands in the background
(Photo credit: Denise Herrera)*

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)	
2	Number of (i) people in UKOTs; and (ii) other people receiving other forms of long-term (>1yr) training not leading to formal qualification	
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)	7
3b	Number of training weeks (i) in UKOTs; (ii) outside UKOTs not leading to formal qualification	
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	12
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	
10	Number of formal documents produced to assist work in UKOTs related to species identification, classification and recording.	
11a	Number of papers published or accepted for publication in peer reviewed journals written by (i) UKOT authors; and (ii) other authors	(i) 1
11b	Number of papers published or accepted for publication elsewhere written by (i) UKOT authors; and (ii) other authors	
12b	Number of computer-based databases enhanced (containing species/genetic information). Were these databases made available for use by UKOTs?	1 - The MSP GSI database, available to the UKOT government and stakeholder
13a	Number of species reference collections established. Were these collections handed over to UKOTs?	
13b	Number of species reference collections enhanced. Were these collections handed over	

Code	Description	Totals (plus additional detail as required)
	to UKOTs?	
Dissemination Measures		
14a	Number of conferences/seminars/workshops/stakeholder meetings organised to present/disseminate findings from UKOT's Darwin project work	4 multi-day workshops (2 locally, 2 in the UK) 3 seminars 9 steering committee (stakeholder) meetings Over 50 individual meetings with stakeholders
14b	Number of conferences/seminars/workshops/stakeholder meetings attended at which findings from the Darwin Plus project work will be presented/ disseminated	2 international workshops 1 international conference
Physical Measures		
20	Estimated value (£s) of physical assets handed over to UKOT(s)	
21	Number of permanent educational/training/research facilities or organisation established in UKOTs	
22	Number of permanent field plots established in UKOTs	
23	Value of resources raised from other sources (e.g., in addition to Darwin funding) for project work	£52,720

Annex 2 Publications

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)
Workshop report	Marine Spatial Planning: Setting the scene, Augé AA (2015)	French	Falkland Islands	Female	South Atlantic Environmental Research Institute, Stanley, Falkland Islands	http://south-atlantic-research.org/media/files/MSP%20Workshop%231%20report%20Setting%20the%20scene_%2024-25%20November%202014.pdf
Workshop report	Marine Spatial Planning: Developing the tools, Augé AA (2015)	French	Falkland Islands	Female	South Atlantic Environmental Research Institute, Stanley, Falkland Islands	http://south-atlantic-research.org/media/files/MSP_Falklands_Developing-the-tools-Workshop-report_16-17_April_2015_FINAL.pdf
Workshop report	Marine Spatial Planning: Identification of key area for marine megafauna, Augé AA, Lascelles B, Dias M (2015)	French	Falkland Islands	Female	South Atlantic Environmental Research Institute, Stanley, Falkland Islands	http://south-atlantic-research.org/media/files/MSP_Falklands_Megafauna_workshop-report_13-14_April_2015_FINAL.pdf
Workshop report	Marine Spatial Planning: Framing the process, Augé AA (2016)	French	Falkland Islands	Female	South Atlantic Environmental Research Institute, Stanley, Falkland Islands	http://www.south-atlantic-research.org/media/files/MSP_Falklands_Framing-Workshop-report_5-7_April_2016_FINAL.pdf
Conference abstract	A whale of a tale: using local knowledge to predict baleen whale distribution around the Falkland Islands. Veronica F Frans, Amélie A Augé, Jan O Engler and Hendrik Edelhoff (2016).	American	Falkland Islands	Female	US-IALE 2016, Asheville, North Carolina, USA	http://www.usiale.org/asheville2016/presentation-details/18414

Annex 3 Darwin Contacts

Ref No	DPLUS027
Project Title	Marine Spatial Planning for the Falkland Islands
Project Leader Details	
Name	Paul Brickle
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Email	
Project Manager Details	
Name	Amélie Augé
Role within Darwin Project	Project Manager, lead on all other aspects of the project
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Partner 1	
Name	Andy Stanworth
Organisation	Falklands Conservation
Role within Darwin Project	Steering committee, data provider
Address	Stanley, Falkland Islands
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Partner 2	
Name	Ben Lascelles
Organisation	BirdLife International
Role within Darwin Project	Steering committee, collaborator on megafauna analyses
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Partner 3	
Name	Phil Trathan
Organisation	British Antarctic Survey
Role within Darwin Project	Steering committee
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Fax/Skype	
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Partner 4	
Name	Chris Locke (in replacement of Malcolm Jamieson who left his position in 2015)
Organisation	FIG Fisheries Department
Role within Darwin Project	Steering committee
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Partner 5	
Name	Paul Brewin
Organisation	Shallow Marine Surveys Group
Role within Darwin Project	Steering committee
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