

Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

Important note *To be completed with reference to the Reporting Guidance Notes for Project Leaders:
it is expected that this report will be about 10 pages in length, excluding annexes*

Submission Deadline: 30th April 2018

Darwin Plus Project Information

Project reference	DPLUS042
Project title	Dolphins of the kelp: Data priorities for Falkland's inshore cetaceans
Territory(ies)	Falkland Islands
Contract holder institution	South Atlantic Environmental Research Institute (SAERI)
Partner institutions	Austral Biodiversity, Falklands Conservation, Oregon State University, University of St Andrews, Shallow Marine Surveys Group
Grant value	£269,914.00
Start/end date of project	1 st April 2016 / 30 th September 2018
Reporting period (e.g., Apr 2017-Mar 2018) and number (e.g., AR 1,2)	Apr 2017-Mar 2018 AR 2
Project leader name	Brickle Paul
Project website/blog/Twitter	Website: www.south-atlantic-research.org/research/current-research/166-dolphins-of-the-kelp-data-priorities-for-falkland-s-inshore-cetaceans Blog: www.south-atlantic-research.org/blog Twitter: @SAERI_FI Facebook: m.facebook.com/profile.php?id=1854594054830087
Report author(s) and date	Marina Costa (Project Manager - PM) 30 th April 2018

1. Project overview

The near-shore waters around the Falklands islands (**Figure 1**) host a unique community of Commerson's (*Cephalorhynchus commersonii*) and Peale's (*Lagenorhynchus australis*) dolphins that exhibit an apparent year-round reliance on coastal kelp forests (**Figure 3**). Despite both species being recognised as of conservation interest under international, regional and national plans, very little is known about their populations or biology and hence vulnerability to anthropogenic threats.

Whilst offshore surveys have been conducted by the Joint Nature Conservation Committee (JNCC), inshore studies have been limited to voluntary cetacean reporting, cataloguing of historical strandings and a small-scale Darwin Challenge pilot study. This lack of data on which to base management decisions has been recognised as a major threat to effective conservation and restricts inclusion into on-going national spatial planning initiatives and inshore ecosystem-based fisheries assessments.

Aim

The aim of the 'Dolphins of the Kelp' project (hereafter DOKE) is to establish baseline data on the **abundance, distribution, natural history** and **genetic diversity** of the Falklands inshore cetacean populations. This information is essential to provide a scientific basis for conservation and ecosystem-based marine management initiatives.

The project is delivered through three complimentary work programmes:

1. island-wide transect survey, using line transect methods to estimate abundance and distribution (**Figure 2**);
2. vessel-based focal studies, using photo-identification and passive acoustic monitoring methods to understand seasonal site fidelity, local abundance, and movement; the studies will be carried out in three areas A. Port Stanley – Port Williams – Berkeley Sound; B. Choiseul Sound; C. Port Howard – Many Branch (**Figure 1**);
3. tissue sampling to determine genetic diversity, local population structure, and relationship to SW Atlantic contiguous continental stocks.

Study area

The Falkland Islands (**Figure 1**) are located on the continental shelf that extends from Patagonia. The climate is cold-temperate with offshore sea surface temperatures ranging from around 6 °C in winter to 13 °C in summer. The Antarctic Convergence lies approximately 500 km to the south of the islands and 700 km to the east. The Falklands include two main islands (East Falkland and West Falkland) as well as the 778 smaller satellite islands (Beauchêne Island lies about 54 kilometres south of the main Islands and has not been included in this project) (**Figure 1**). The coastline of the Falkland Islands is complex, containing many small inlets, bays and river estuaries. The majority of the Falkland Islands coast is rocky although several sandy beaches are present. Kelp (mainly giant kelp, *Macrocystis pyrifera*, and tree kelp, *Lessonia* spp.) forms extensive forests in the shallow waters extending up to one km from the coast in several areas.

Three locations have been identified to carry out the vessel-based focal studies (work programme 2): A. Port Stanley, Port Williams, Berkeley Sound; B. Choiseul Sound; C. Port Howard/Many Branch (**Figure 1**). The areas were selected based on previous knowledge about the presence of at least one of the two target species, area accessibility, and survey feasibility during both seasons (considering limited daylight hours in winter).

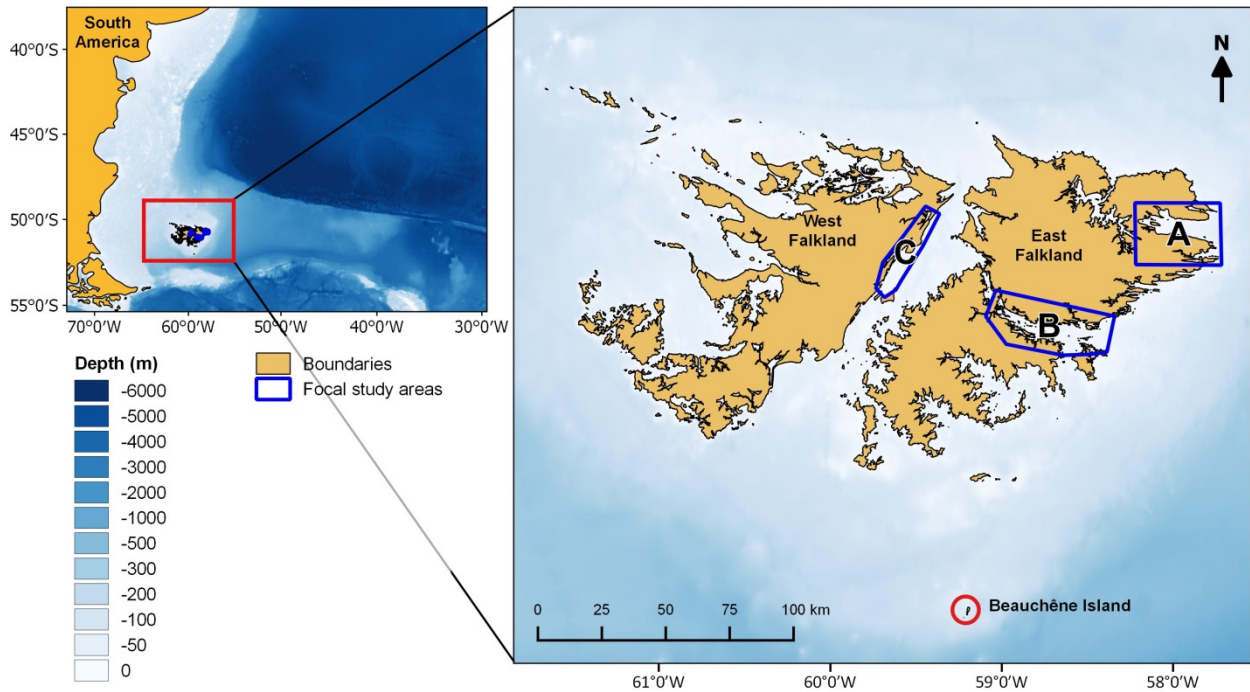


Figure 1 - Maps of the Falkland Islands and its position on the Patagonian shelf. Boundaries include waters within 10 kilometres (indicated by the buffer line) and show the study area of the Dolphins of the kelp project. The three areas selected for the focal survey are shown in blue: A. Port Stanley – Port Williams – Berkeley Sound; B. Choiseul Sound; C. Port Howard – Many Branch.

The study area selected for the aerial survey (work programme 1) measures 19,314 km² and covers the waters within 10km from the Falkland Islands (**Figure 2**). The area was divided in 12 strata accounting for possible differences in physical characteristics with respect to the prevailing winds and currents and the general physiography of the sea bottom. A total of 217 transects spaced between 5 and 6 km and generally oriented perpendicular to the coast north-south were generated by the software Distance 6.2.

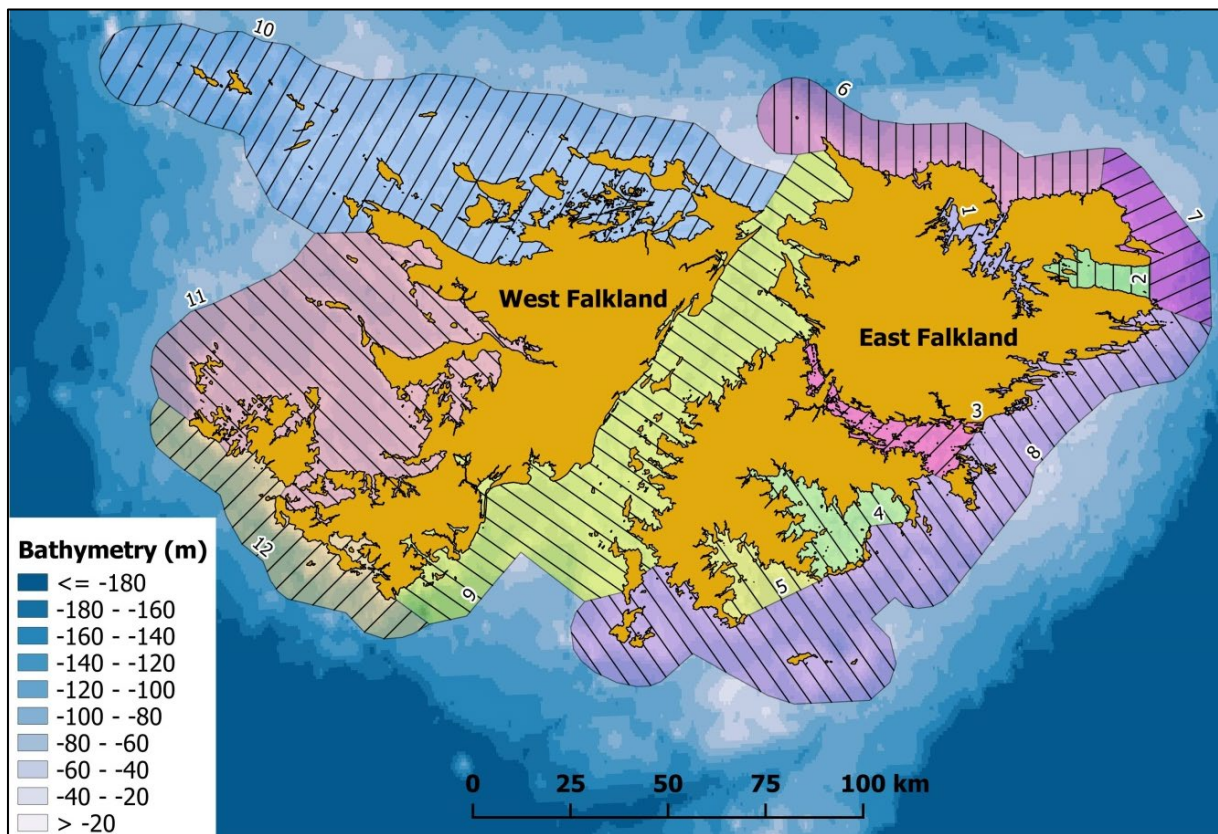


Figure 2 - Map of the Falkland Islands showing the study area for the aerial survey including waters within 10 km from the coastline (divided in 12 strata) and transects (parallel black lines) obtained with the software Distance 6.2.

Target species

Target species of the project are Commerson's dolphin (*Cephalorhynchus commersonii*) and Peale's dolphin (*Lagenorhynchus australis*). All the cetacean species encountered have been recorded during vessel and aerial surveys.

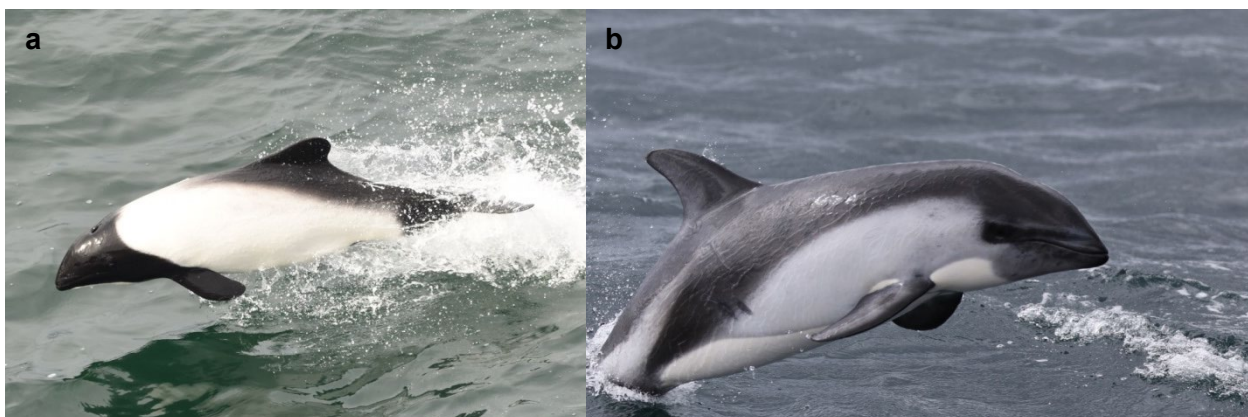


Figure 3 - Target species of the Dolphins of the kelp project: a. Commerson's dolphin (*Cephalorhynchus commersonii*), and; b. Peale's dolphin (*Lagenorhynchus australis*). Photos by SAERI.

2. Project stakeholders/partners

The project has a core stakeholder engagement component and activities, issues and solutions are periodically presented and discussed with partners and stakeholders through a locally-led iterative process.

The **project partners** are:

- Falkland Islands Government (FIG)
- Falklands Conservation (FC)
- Shallow Marine Surveys Group (SMSG)
- Austral Biodiversity
- Oregon State University
- University of St Andrews

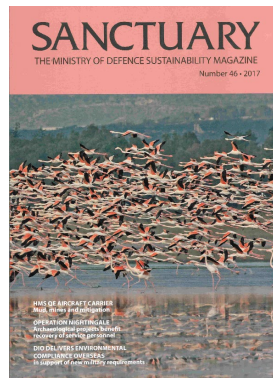
The Project Steering Group is formed by Paul Brickle and Tara Pelembe (SAERI), Grant Munro (Austral Biodiversity), Scott Baker (Oregon State University), Sonja Heinrich (University of St Andrews), and Paul Brewin (SMSG), and has been involved in all decisions directly or in group. Until now the group has met four times to discuss progress, methodology, provide technical advice etc. (see Annex 3 for the Steering Committee meeting minutes). There is regular contact between the project PM and the FI Environmental Officer (Nick Rendell and, since December 2017, Denise Blake) to discuss the field work details and to review the Species Action Plan (SAP). The project team has been coordinating the developing of the SAP with Falklands Conservation to best integrate the results from this project and their Best project research in a single Cetacean SAP.

The **local community** has been engaged since the survey planning. In the Falklands the land is privately owned and land-owners must be contacted, and permission gained prior to entering their properties. Even if our study was carried out at sea, land owners of the areas overlooking our study areas were contacted to explain the field work and the aim of the project. Land owners were asked for permission to carry out surveys in three focal study areas (**Figure 1**). Field reports including activities up to May 2017 were sent to 34 locations in camp (rural areas outside of Stanley) (see indicator 1.6). All field reports will be available at the end of the project on the SAERI website (under development at the moment).

The local community is also regularly informed through dedicated public presentations, articles published in the local newsletter, radio and television interviews, and the Facebook page

'Falkland Community Board' that is widely used to communicate activities in the islands (see indicator 1.8). Facebook and the articles in the Penguin News (PN) were considered to be the best way to communicate the project results in camp.

A good relationship was established with the **Military of Defence (MOD)** and in particular with the Commander Bill Dawson, chief of the Mare Harbour station who was always informed about our position and activities, allowing the use of emergency helicopter SAR if needed. An article about our project was published in the MOD magazine Sanctuary (see pdf embed below).



The Environment Committee is a Falkland Islands Government Committee that is chaired by the Member of the Legislative Assembly (MLA) who holds the Environment portfolio for government, and it brings together a wide group of government, NGO and community representatives. We have given one presentations to this Committee to provide updates on the project, and again providing an additional platform for discussion and advice.

3. Project Progress

The majority of the activities (see **Annex 1**) proposed for each of the six project outputs have been carried out within the approved timeframe. A seventh output has been added as required.

3.1 Progress in carrying out project Activities

Output 1: Capacity building for cetacean research.

All activities concerning Output 1 have been completed (see Annex 3 for evidence). Under staff, the project officer was employed for one year and then short-term project assistants have successfully been carrying out the fieldwork and supporting office work since December 2017. Particular effort has been invested in the training of local volunteers (**Activity 1.6, 1.8**) in the photo-identification methods (**Figure 4**). Volunteers are not only supporting the project carrying out analyses of the material collected during field campaigns but it is likely that they will continue to collect photo-identification data independently after the project ends. Although this activity cannot replace dedicated research, it will help in maintaining the catalogues updated. Sightings and animal pictures will be sent to Falkland Conservation (FC) to maintain the photo-id catalogues after the end of the project.



Figure 4 – Two cetacean photo-identification courses were carried out with ten people each in January and February 2017. A certificate of participation was release to all participants and few people are collaborating with us in analysing sighting pictures.

Research protocols targeting key aspects of survey activities, cetacean identification, safe navigation and health-safety procedures are being developed with material available from the project page of the SAERI website (www.south-atlantic-research.org) or upon request (**Activity 1.7**). Dissemination activities have been undertaken (**Activity 1.11, 1.12, 1.13**), in particular targeting islanders outside Stanley (in camp). Direct visits to camp were possible only in the locations where fieldwork was carried out. Visiting other on-camp locations was difficult due to the airplane and accommodation costs not being covered by the project and by the difficulty in finding a suitable common date for the inhabitants (who are busy on their farms). The suggestion from islanders was to organize awareness activities in Stanley during the Farmers week and in winter when farming activities are reduced and people travel more to Stanley (see indicator 1.8). The cetacean Awareness day was organised in July 2017 and at least 80 children and their families attended the event (Figure 5).



Figure 5 – The Cetacean Awareness Day was organised in Stanley in July 2017.

Output 2: Island-wide Transect Survey. Island-wide population estimate and species distribution maps for Commerson’s dolphin, Peale’s dolphin and sei whale and model of abundance.

Includes activities related to the delivery of the island-wide aerial transect surveys used to estimate population size and distribution of the targeted species. All activities concerning data collection (**Activity 2.1**), survey planning and field work (**Activity 2.2, 2.3, 2.4, and 2.5**) have been completed (Figure 6, 7). Some additional field work with the use of a drone from land is ongoing to estimate the fraction of time animals spend underwater and correct the population size estimates (field work length will depend on dolphins’ presence and days with suitable weather conditions). Data have been cleaned, metadata have been prepared, and all files have been stored within the SAERI IMS & GIS centre (**Activity 2.8**). Most parts of the analyses have been carried out and preliminary results have been presented at the European Cetacean Conference in La Spezia in April this year (conference abstract – in Annex 3). This includes estimate population size for Commerson’s (N=5,544 CV=0.19) and Peale’s (N=2,250 CV=0.22) dolphins.

A peer-reviewed publication is currently being prepared (**Activity 2.6**). Field work reports have been circulated and final results will be added in due course (**Activity 2.7**). See Annex 3 for the evidence.

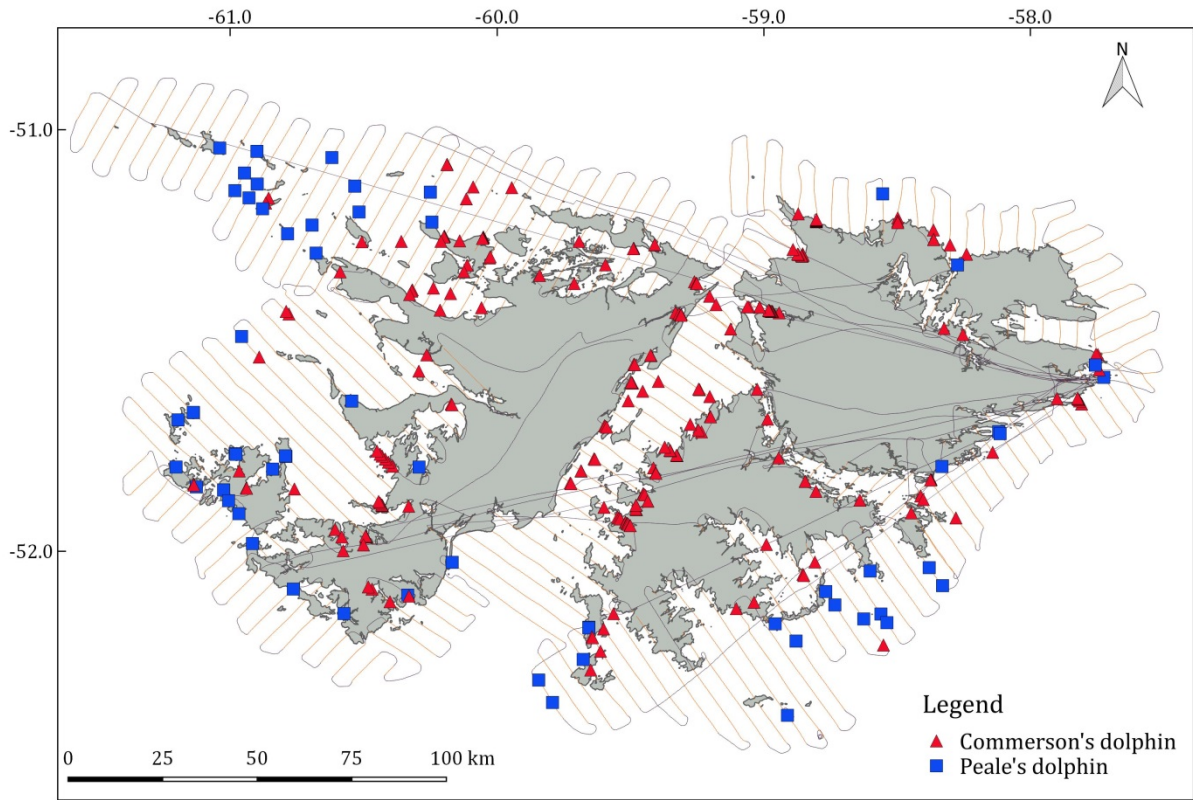


Figure 6 - Sighting distribution of Commerson's (red triangles) and Peale's dolphins (blue squares) observed during the aerial survey (including navigation of transect) carried out in March-May 2017.

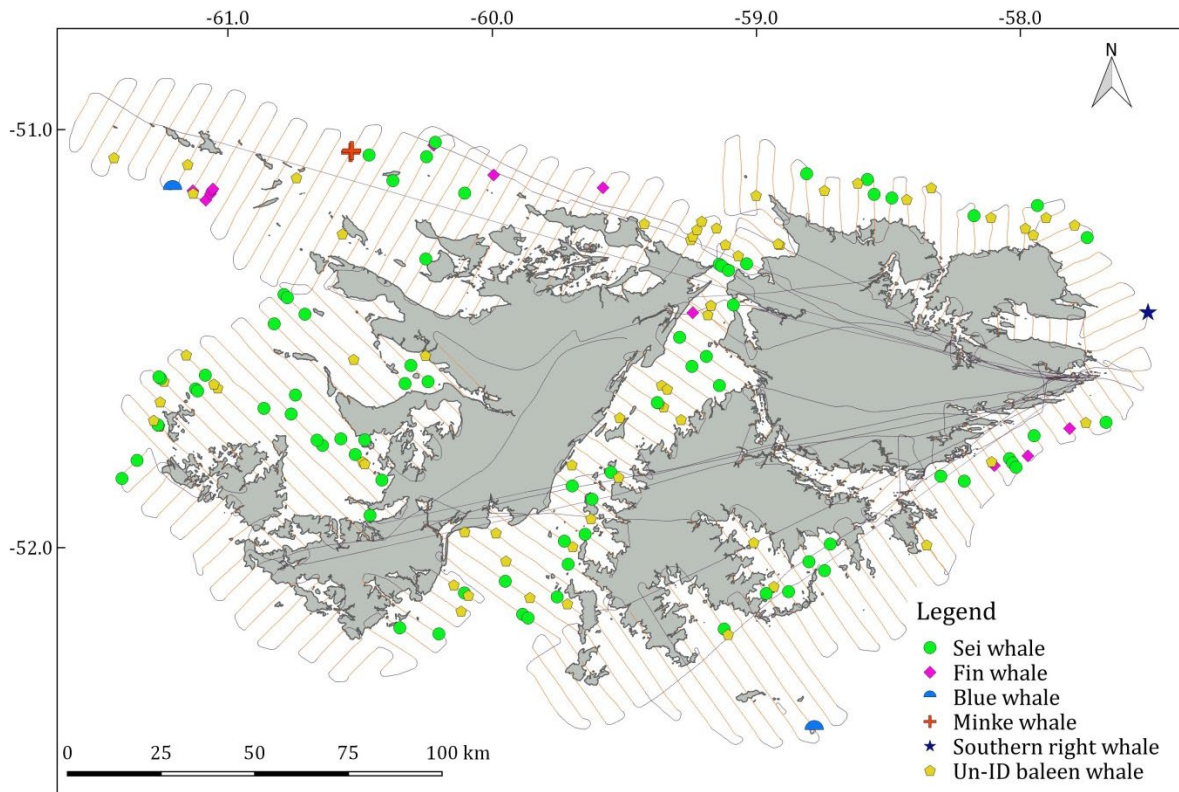


Figure 7 - Sighting distribution of baleen whales observed during the aerial survey (including navigation of transect) carried out in March-May 2017.

Output 3: Repeat transect focal study at 3 focal study sites. Data on finer-scale spatial drivers of distribution, seasonal occurrence and key habitats.

This output focuses on the repeat transect focal study at three selected study sites (**Figure 1**). Three out of the planned four seasonal boat-based surveys (**Figure 8**) have been carried out in the three locations selected (**Activity 3.1, 3.2, 3.3, 3.4, and 3.5**). The last survey is due to be undertaken in June-July (2018). An extra survey, was carried out in February-March 2017 to cover the reproductive season of dolphins (that being unknown before this project was not considered during the initial planning). During the survey in January 2017 to collect tissue samples (**Activity 6.2**) we also collected photo-identification data, thus we will have six sampling periods over two years, instead of the planned four. This will allow more robust mark-recapture analyses (see output 5) considering that the recapture rate is small (likely due to the large population size of both species).



Figure 8 - The RHIB Baltic Warrior of the Shallow Marine Survey Group (SMSG) used for the field work.

Data processing is in progress and field reports have been circulated; analyses are in progress and results will be presented under Output 5 in the final report and a peer-reviewed publication (**Activity 3.6, 3.7**). Metadata have been submitted for all of the data analysed until now (**Activity 3.8**).

Output 4: Passive acoustic monitoring focal study at one of the focal study sites. Data on temporal drivers of distribution and seasonal sensitivity.

Passive acoustic monitoring (PAM) stations were set up in one of the focal study areas (**Activity 4.1**). Five C-POD units (static underwater acoustic data loggers), two for shallow waters and three for deep water, were deployed in Many Branch (**Figure 9**) in the West Falklands on the 16th of April 2017. However, when we went to recover the units to change the batteries in July 2017, we discovered that the two units positioned respectively 1000m north (2089) and 1000m southeast (2087) the harbour canal, had been disappeared. The moorings

might have been lost in by a strong storm that also destroyed the anchorage system of a large buoy from Premier Oil nearby. The anchoring system used to fix the C-PODs to the bottom weighed 70 kg, the maximum weight we estimated to be manageable by hand from a RHIB.

The security of the other C-POD units has been carefully considered to minimize future losses, including different anchoring systems to adopt in the future. The project team is in contact with the pilots of the Falkland Islands Government Air Service (FIGAS) to monitor the buoys, in particular the unit outside the harbour and refer if there is any significant change in their positions.

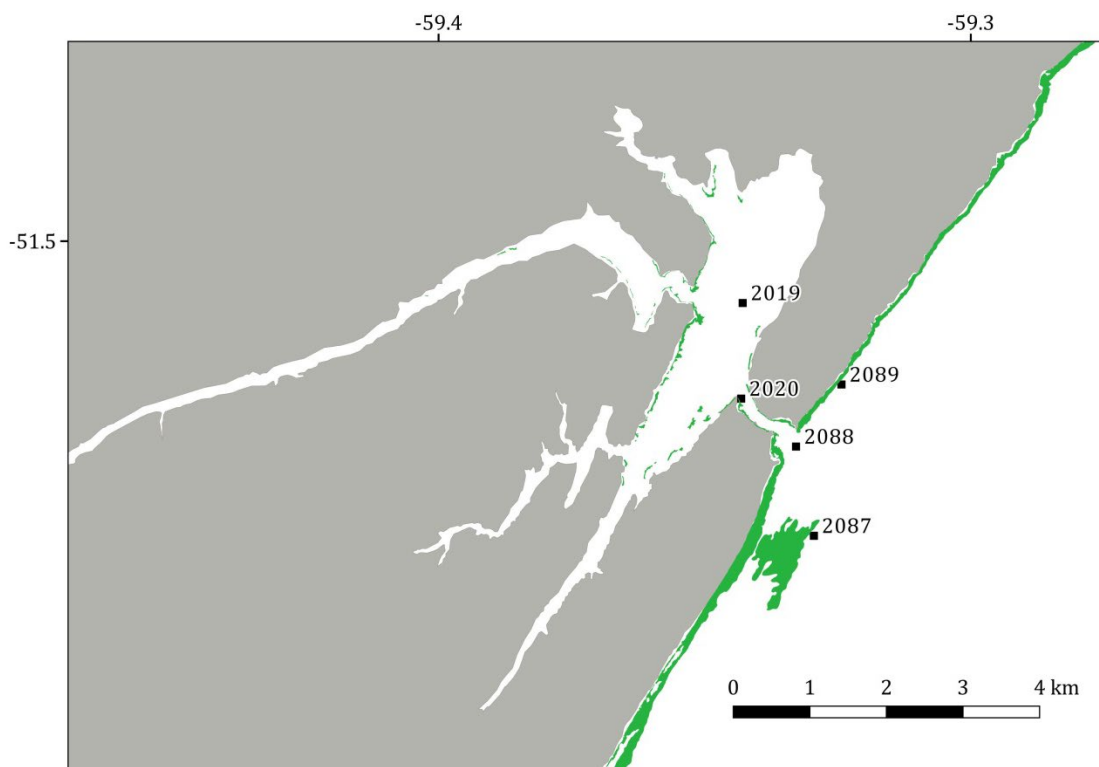


Figure 9 - C-POD positions (black squares) at Many Branch Harbour, West Falkland. Green patches represent kelp forests. The units 2087 and 2089 have been lost during a storm between mid-April and mid-July 2017.

The three remaining C-POD units were recovered (Figure 10), serviced and re-deployed in the same locations in July 2017, November 2017, and March 2018 (see field work reports listed in Annex 3). The units will be recovered during the last boat survey in June 2018 (**Activity 4.2**).



Figure 10 - Recovery and maintenance of the C-POD unit 2088.

Analyses for the report will begin in July 2018 (**Activity 4.3, 4.4, 4.5**) as well as data storing in the SAERI IMS & GIS centre and metadata preparation (**Activity 4.6**). We are currently looking for a student willing to analyse and publish the acoustic data.

Output 5: Photo-identification focal study at 3 focal study sites for residency, dispersal, population structure & recruitment and population estimate. Residency, ranging patterns and spatial scale of movement with reference to susceptibility to localised impacts and appropriate scale of management units.

Photo-identification data collection (**Activity 5.2**) has been carried out during five vessel-based surveys (see Output 3). The final survey is due in June-July 2018. Data processing is in progress which involves reviewing and archiving 52,231 photographs collected for photo-identification. Data analyses and reporting will follow as soon as the photographs have been turned into numerical data (**Activity 5.3, 5.4, 5.5**). Metadata have been submitted for all data collected until now to the South Atlantic Information Management and GIS Centre (**Activity 5.6**).

Until now 74 e Peale's dolphins and around 450 Commerson's dolphins have been identified individually from the photographs. Several individuals have been identified in different surveys suggesting that the data can be used for mark-recapture analyses (**Activity 5.4**). We also attempted to collect photo-identification data from land but this proved not feasible.

Due to the large number of pictures the photo-identification database needed to be re-planned. iLaria Marengo (the SAERI's Information Management and GIS Centre Project Manager) will set up the new database (**Activity 5.1 and 5.2**). In the interim a pdf catalogue is available on the SAERI website (www.south-atlantic-research.org/research/doke/190dolphin-catalogue).



Figure 11 - Poster with few of the marked individuals of Commerson's dolphins identified during the project.

Output 6: Genetic diversity focal study at 2 of the focal study sites. Population identification between South American con-specifics and potential sub-populations within the Falklands. Defining scale of management units.

Genetic field work activities and laboratory analyses were completed successfully in 2017 (**Activity 6.1, 6.2, 6.3, and 6.4**). The report writing is in progress as well as analyses of tissues from dolphins of South America (**Activity 6.5**). A report (see abstract listed in the Annex 3) will be circulated as soon as analyses are completed (**Activity 6.6**). The preparation of metadata is in progress (**Activity 6.7**). Samples will remain stored at the Hatfield Marine Science Centre, Oregon State University, USA where facilities are more suitable than facilities at the Falklands (**Activity 6.8**). Genetic sequences will be archived with the international repository GenBank at the end of the project (**Activity 6.9**).

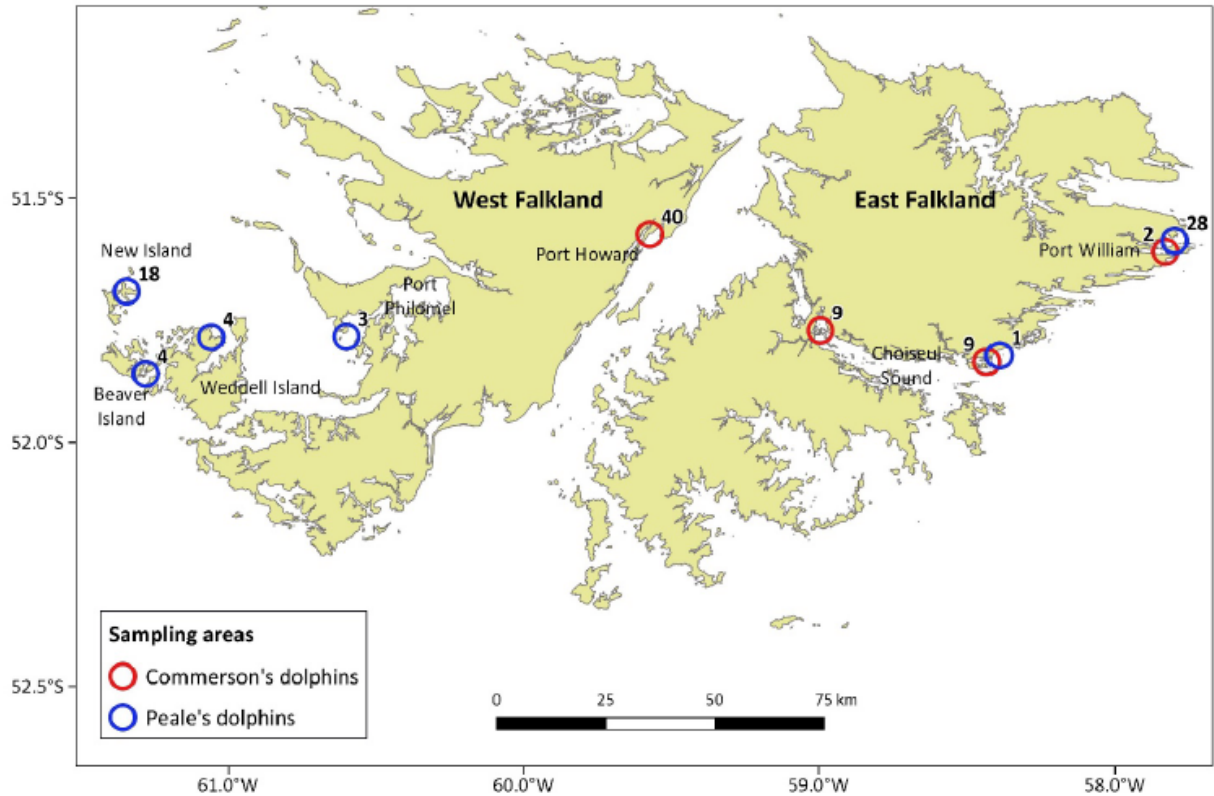


Figure 12 - The location and number of genetic samples collected from Commerson's and Peale's dolphin during the 2017 austral summer season in the Falkland Islands.

3.2 Progress towards project Outputs

All outputs are steadily progressing and will be mainly achieved by the end of the project. Due to the amount of the data collected and staff changes, it is likely that the mark-recapture paper (Output 5, Activity 5.4) will be drafted after the end of the project.

Output 1

A massive effort has been carried out to increase stakeholder engagement. About 10 presentations were given in different locations, including the Farmers Week (2-7 of July 2017) which is one of the most important events for those living in the Falkland Islands. Workshop and training have been implemented with great participation and media interest (a television and radio interview).

Output 2

Field work actions have been carried out successfully (field work reports and protocols are in **Annex 3**). Analyses and the draft of a peer-reviewed paper are on-going. Results were presented at the European Cetacean Conference in La Spezia in April (abstract was submitted in October 2017) (see embedded files below – click on image to open).



Abstract



Poster

Output 3 and Output 5

Field work actions have been carried out successfully to date. The last boat-based survey is planned for June-July 2018. Analyses are on-going. Almost 50,000 pictures have been analysed. Data analyses and reporting will follow as soon as the data will be ready.

Output 4

C-PODs were deployed in April 2017. Maintenance has been carried out every three months. In June the C-PODs will be recovered during the last survey. Analyses will begin in July. A student is going to be identified to bring results to a higher level than a simple report.

Output 6

Genetic diversity analyses have been carried out successfully. Field work report is available and circulated to collaborators who are involved in studies of Commerson's and Peale's dolphin from the South American continent. A peer-reviewed paper is under preparation.

3.3 Progress towards the project Outcome

The project outcome is 'Established baseline data on the abundance, distribution, natural history and genetic diversity of the Falklands inshore cetacean populations to provide a scientific basis for conservation and ecosystem-based marine management initiatives'

The project will achieve this outcome by the end of the funding period. To explain this in more detail, an update on progress against the outcome indicators is given here.

Outcome indicators 0.1 and 0.2 refer to the need to update the expiring Cetacean Species Action Plan 2008-2018 (SAP) redrafting an updated research plan for cetaceans (partially included in the SAP). The project produced the baseline data required and in particular:

- First estimates of abundance for Commerson's and Peale's dolphins and baleen whales around the Falkland Islands have been obtained. Results are being finalized in a peer-reviewed paper that should be submitted before the end of the project.
- First genetic characterization of Commerson's and Peale's dolphin populations has been carried out. Results are being finalized in a peer-reviewed paper that should be submitted before the end of the project.
- Sighting distribution maps have been produced for all species and habitat modelling will begin in May 2018.
- Crucial information on the dolphins' ecology has been gathered including: calving season, residency, seasonal use of areas, and individual movement and ranging patterns. Analyses of these data are on-going and results will be finalized after the last field trip in June-July 2018.

Data are being used to review the cetacean Species Action Plan (SAP) and the research plan for the future. Several meetings have been attended by the project team and the partners including the environmental officer. An agenda to update the SAP has been discussed and at the end of April the first draft of the document will be presented internally for review. Among the agreed points to update the SAP there are:

- To review the objectives including the need for increasing awareness of the marine environment and the need that conservation measures are adopted and implemented.
- To update the cetacean species list included focusing on common/regular species inhabiting nearshore waters or observed offshore around fishing vessel.
- To prioritize the research in the future integrating actions among local organizations.

- To improve the stranding network with a bigger effort to involve local people in the reporting.

The Outcome indicator 0.3 is completed to date with metadata being produced and data available internally for other projects. At the end of the project, after completing the metadata with remaining information from field work and analyses, metadata and data will be available from South Atlantic Information Management and GIS Centre. The development of new services to facilitate the management of spatial data for SAERI, FC, SMSG and FIG is on-going in collaboration with the University of Dundee.

3.4 Monitoring of assumptions

The monitoring assumptions (see Annex 2) were carefully considered and still hold true. In particular, the awareness of the remoteness of the area has required some modifications in the survey plan (such the use of a safe boat for the focal study and of an aircraft instead of a vessel for the island-wide transect survey), and some delay in the execution of the project (team recruitment, easiness to obtain equipment and maintenance parts).

Although the local community have shown that they are very interested in the project and willing to contribute and support as much as possible, it was not always easy to find the right opportunity/timing to involve large number of people at the same time, in particular outside of Stanley. This was mainly due to the nature of the work on farms (often very large and with many animals) and to the fact that activities were often organize depending on weather conditions and could not be planned much in advance.

3.5 Project support to environmental and/or climate outcomes in the UKOTs

One important result of the project is providing the first genetic characterization of Commerson's and Peale's dolphins around the Falkland Islands. The islands are geographically isolated from continental populations by several hundred miles of open ocean and both species appear to be island-dependent, resident year-round and are frequently observed nearby the dense kelp forests within a few hundred meters off the shores.

These results provide new information to understand the evolutionary trajectory of dolphin populations as they differentiate into subspecies and then diverge into species (Pichler et al., 2001) and are an essential environmental asset not only for the Falkland Islands and the UKOTs but also at regional and global scales.

The most essential information required for any conservation action is the knowledge of population size and how it is distributed in time and space. Cetaceans are an important part of the environmental asset of any country and estimates of abundance are needed to access the status of populations and in case of conflict with human activities, to determine mortality levels that do not affect population viability (e.g. setting annual removal levels such as bycatch limits). This project provided the first abundance estimates for dolphins and baleen whales encountered in the coastal waters of up to 10km. These data are the baseline against which population trends can be assessed in the future. The coastal waters of the Falkland Islands are still in a relatively pristine state and the information collected during the this project might represent a rather unique example worldwide of how cetacean populations behave and strive before any substantial human impacts.

The project team was invited to do a webinar by the UK Overseas Territories Special Interest Group (OTSIG) of the Chartered Institute of Ecology and Environmental Management (CIEEM) that is leading professional membership body representing and supporting ecologists and environmental managers in the UK, Ireland and abroad. The webinar was streamed live at the St Helena conference '2018 Diverse Island Environments'. The 'Dolphins of the kelp' project is committed to promoting the environmental work done at the Falklands in the UKOTs hoping to provide a forum for discussion and the repetition of similar project elsewhere in the UKOTs.

Pichler, F. B., Robineau, D., Goodall, R. N. P., Meyer, M. A., Olivarria, C., & Baker, C. S. (2001). Origin and radiation of Southern Hemisphere coastal dolphins (genus *Cephalorhynchus*). *Molecular Ecology*, 10(9), 2215-2223.

4. Monitoring and evaluation

Some of the detail around methods employed to internally monitor and evaluate the project have been described in other sections (in particular section 3), however an overview is provided here.

- **The monitoring and evaluation plan** is being implemented as outlined in the project document; there have been no changes at this stage. Key points to report against this as follows:
 - The overall **steering committee** is given regular updates and reports, and provides technical advice and support. Quarterly meetings have been established.
 - Trello is used as the **online project management and file-sharing system**.
 - A **Memorandum of Understanding** (see **Activity 1.1**) has been finalized between the partners outlining the obligations and roles of all parties in delivering this project. The project changes (see Section 3) and progress have been presented and discussed by the steering committee in March 2018. The next meeting is due in June 2018.
- The **Outputs and Activities** are being delivered as outlined in the logframe in the application form; therefore they are directly linked to the overall **project Outcomes**. The indicators that are specific to the overall project outcomes (updates species action plan and research plan) will be delivered in the next stage of the project.
- The **indicators of achievements** (both qualitative and quantitative) are measured via the ongoing reporting process. These are verified as outlined in the logframe and the detail of this is provided in section 3. The Steering Committee oversees this reporting and verification.

5. Lessons learnt

There are a number of areas of the project that have worked particularly well.

The cooperation of the partners and the international stakeholders was and is a major key to the success of the project. The DOKE is a pioneering and large project and given its dependency on a number of external factors, has to be flexible and adaptable. The quick and strong support received by the Darwin Initiative team allowed the field activities to be carried out in time and in the best way possible contributing to the success of the project.

The project was also very well received by local people, contractors, and military. All public activities organised were attended by high number of people and we received regular invitation to present our results to local and on-camp schools as well as to different clubs running at the Falklands (i.e. Guild of spinners, weavers & handicrafts, Falkland Islands Womans' Association, etc.). The Cetacean Photo-identification Course organised this year and advertised by local newspaper, radio and television was attended by 20 people and several more asked about the possibility to join the field work and/or help with the analyses of the photographic material.

One of the key lessons learnt was around lead in time for recruitment of the team.

The timing of the recruitment was such that the Project Manager (PM) was recruited to arrive to the Falkland Islands six months into the project schedule. The original project proposal anticipated a 2-month lead in time. Therefore we recommend that in the future, projects on the Falkland Islands should build in a longer lead in time for PM recruitment (c. 6 months), with key project activities and any other recruitment scheduled after that. This longer-lead in has already been built into SAERI's two new Darwin Plus projects.

Another of the key lessons learnt was the need to tune research activities and planning to the remoteness and wilderness of the area. Field work as planned has not been always possible due to the harsh weather conditions, delay in equipment supplying, impossibility to reach some areas, lack of safety conditions. It is important that working in remote areas the team is aware of these difficulties and is able to modify plans and expectation in line with the environment.

6. Actions taken in response to previous reviews (if applicable)

Reviewers of the past project Annual Report suggested a larger stakeholder involvement and the development of a further output making explicit reference to the process and activities associated with ensuring the information produced is used by decision-makers.

Particular effort has been put to engage more with the islanders within and outside of Stanley. During the past year the project has carried out several activities including almost one presentation per month, one webinar streamlined in UK, North Ireland and St Helena, one Cetacean Awareness Day carried out in winter to involve islanders busy with farming during summer, one article on the MOD magazine 'Sanctuary', two PN articles, one radio interview, two television interviews, one article on the SAERI blog, several videos and posts on SAERI Facebook, and two visits to the primary schools in Stanley and Port Howard (West Falkland), (see Annex 3). Furthermore, more training have been carried out by running one Photo-identification course that was repeated twice reaching a total of 20 participants (several of whom are supporting the project doing photo-identification of the sightings done during the surveys). A further 21 volunteers have been invited to join the field work and have been trained

As mentioned before, staff turnover at the Falklands is quite high meaning that trained people might be not always be available. The protocols and materials (see Annex 3) produced during this project and shared with FC, SMSG and FIG will allow a continue training after the end of the project within SAERI or the other partner organizations. In particular, the development of new tools where to store sightings and animal pictures will allow FC to maintain the photo-id catalogues updated after the end of the project.

The reviewers also recommended that:

'The project should make it more explicit as to how all the outputs will contribute to the outcome by maybe explaining the process which will be undertaken to renew the species action plans which are coming to an end in 2018 and the information provided by this project will be used. If the project's team will be playing a role towards this under this project they could consider adding another output to track how it is all coming together'

As much of the process is embedded in the existing activities, we haven't added a 7th output. However this report attempts to outline more clearly and explicitly the process for feeding the outputs into the species action plan, and for the SAP process itself to address this feedback.

Outputs 2-6 provide enhanced evidence base that will be instrumental for updating the SAP that was drafted ten years ago based of limited data availability. The diagram below demonstrates how the project outputs feed into the outcomes in a Falklands context:

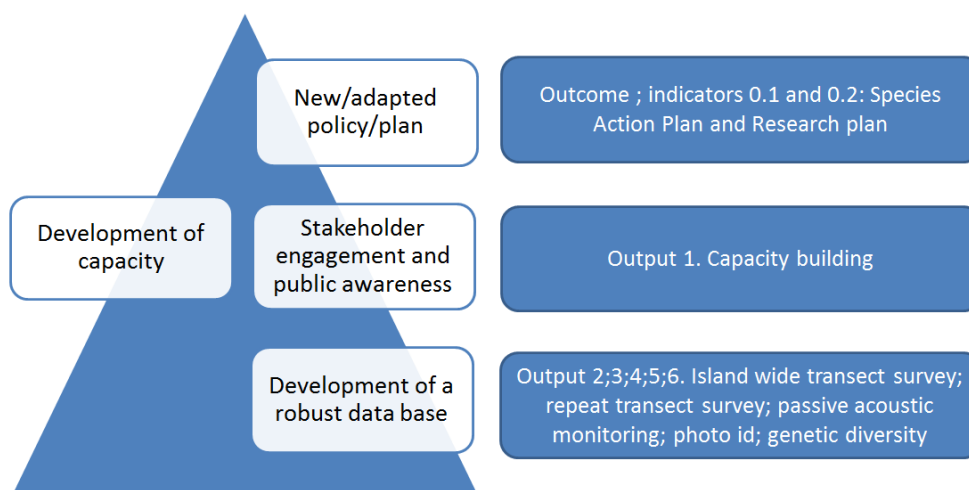


Figure 13 – Links between project outputs and outcomes.

In terms of the species action planning process, and the creation of a research plan, in consultation with partners, it has been agreed that the research plan will form an annex within the SAP and therefore both plans will be fed through the same process. The diagram below outlines the SAP process in the Falklands. This project will deliver the updated SAP (i.e. all of the blue steps in the diagram) and the Falkland Islands Government lead will take the SAP through the formal sign off process post project (i.e. the green step).



Figure 13 – SAP process in the Falkland Islands.

7. Other comments on progress not covered elsewhere

Nothing to add; all progress has been covered in the other sections.

8. Sustainability and legacy

During the past year several activities have been carried out to make the project as visible as possible. The efforts made to involve local people have been outlined in section 3 and a list of the outreach is available in the Annex 3. In particular we could notice an increased interest toward the project during the Cetacean Awareness Day, organized in July 2017 and the Photo-identification Course. Contrary to what we expected given that the course was long and intense, we had to organize a second day in order to accommodate all the people interested.

The possibility to do a second cetacean awareness day is under discussion and budget dependent.

In terms of delivery against our planned exit strategy as outlined in section 27 of the application form:

- The **recruitment and training of local volunteers** has been carried out and will continue in the next 6 months of the project.
- High quality data have been collected and results have been shared (up-to-date), providing the evidence base for future planning.
- An MSc student at the University of St Andrews has developed distinct aspects connected to the project and a manuscript is almost ready for publication. The student has developed a predictive habitat model for the distribution of Commerson's and Peale's dolphins around the Falkland Islands to help identify areas of importance for each species. The data used to build the statistical model stem from the 2014 pilot survey conducted as part of the project "Inshore Cetaceans of the Falkland Islands" funded by the Darwin Challenge Fund (which led to the development of the current project). Some of the aerial survey data collected for the current project were then used to validate the model predictions. Another student will be identified to carry out complimentary analyses of the acoustic data set.
- The team and in particular Prof Scott Baker has developed and is developing **collaborations** with South American partners to characterise population structure of the dolphin species using genetic analyses.

There has been a lot of thinking and planning around post project sustainability and a number of systems and processes have been established at all levels:

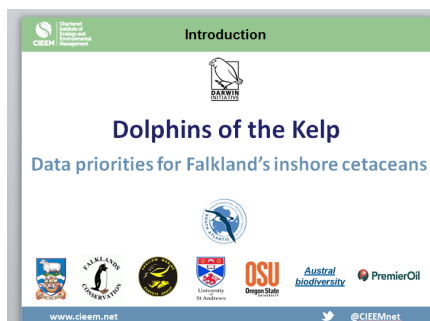
- Policy: the updated species action plan will become an FIG plan, therefore it will be embedded in central government.
- Resources and people: the training of volunteers has been very successful, and there are now a number of people on island who will contribute to cetacean knowledge by reporting cetacean observations; post project volunteer sightings will be updated in the Falklands Conservation database.
- Research: the research plan will provide a framework for encouraging future research on cetaceans, and in addition the partnerships developed through this project are likely to evolve into future research initiatives.

9. Darwin identity

All activities carried out to publicise the project as well as the material produced (see **Annex 3**) included the clause 28 of the Darwin terms and conditions¹ and the Darwin Initiative logo has been displayed with the funding entity clearly separated from the DOKE project.

During presentations, the second slide was usually dedicated to the Darwin Initiative (as well as the project partners).

¹ *The grantee is required to acknowledge **when publicising the work programme**, in reports etc, that it has been grant aided by the Darwin Initiative through UK Government funding and to use the Darwin Initiative logo wherever possible. In addition, project leaders are expected to advise the Department about any UK media/news stories before they are published. Where part of a larger programme, a Darwin project should be easily identifiable. Profile is important to the future of the Darwin Initiative.*



CIEEM Presentation



Poster presented to ECS La Spezia

10. Project Expenditure

Table 1: Project expenditure during the reporting period (1 April 2017 – 31 March 2018)

Project spend (indicative) in this financial year	2017/18 D+ Grant (£)	2017/18 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2017-2018 – if appropriate

Project summary	Measurable Indicators	Progress and Achievements April 2017 - March 2018	Actions required/planned for next period
<p>Impact</p> <p>Inshore marine resources, habitats and species of the Falkland Islands are managed on a sustainable basis within an ecosystem based planning approach that ensures the long-term maintenance of biodiversity</p>		<p>The ‘Dolphins of the Kelp’ produced robust scientific data about the two target species of dolphins (Commerson’s and Peale’s dolphins) with year-round residence in the coastal waters of the Falkland Islands. Data include the first genetic characterization and the first abundance estimates of the dolphin’s populations.</p> <p>Locally, this information has being used to review the Species Action Plan for cetacean and will be essential to support policy-makers to develop management measures for conservation and to integrate on-going national spatial planning and inshore ecosystem-based fisheries assessment.</p> <p>Internationally, the project results are advancing the worldwide knowledge of cetacean biodiversity as required by the Aichi target 19 of the Convention on Biological Diversity (CBD), and by the International Union for Conservation of Nature (IUCN).</p> <p>Furthermore, the high-quality data produced by this project, will allow the dolphins’ subpopulations of the Falkland to be evaluated against the IUCN Red List Categories and Criteria of the risk of extinction separately from the Patagonian subpopulations.</p>	

		<p>Finally, abundance estimate for Peale's dolphins obtained in this project will be presented to the next IUCN meeting to update the assessment of extinction risk for this species.</p>	
<p>Outcome Established baseline data on the abundance, distribution, natural history and genetic diversity of the Falklands inshore cetacean populations to provide a scientific basis for conservation and ecosystem-based marine management initiatives</p>	<p>0.1 Biologically assessed Conservation Status and updated SAP available to ensure population-units have sufficient numbers, geographic distribution, genetic diversity and habitat to provide a stable population.</p> <p>0.2 Prioritised research plan published and available to mesh identified needs for future research and meshing of project data into planning initiatives, EIAs, etc.</p> <p>0.3 Project data are held within the South Atlantic Information Management and GIS Centre for inclusion within national planning i.e. Marine Spatial Planning/Ecosystem Assessment</p>	<p>0.1 The draft of the updated version of the SAP will be presented in May 2018 to the project partner for review. The document includes a review of the objectives in the light of the new information available about genetic characterization, abundance estimation of the populations, and distribution of coastal dolphins. Data will be submitted (in part they are already been submitted) to the IUCN scientific committee for future assessment of the risk of extinction.</p> <p>0.2 Research plan for the future have been included in the SAP. Among the suggestions there is the need to: repeat the aerial survey in winter; investigate feeding activities and interactions with sea lions; carry out some extra tissue sampling on both species. About this, a small grant has been asked to continue the genetic data in October-November 2018.</p> <p>0.3 Metadata have been produced for the data collected until now. Data generated from concluded part of the project (Aerial survey, Condor survey in the West, seasonal boat-</p>	<p>In term of key actions for the next periods these include:</p> <ul style="list-style-type: none"> - Fieldwork: the last focal study will be carried out in June-July 2018. - Publications: a genetic paper and a paper about abundance estimate are in preparation. The habitat modelling paper will began in May 2018. The mark-recapture paper will began after the end of the project. - Analyses: Photo-identification data handling and analyses are in progress; C-POD data will be sent out for analyses. - Reporting and storing: final reporting will be carried out in August-September as well as the storing of data and updated metadata.

		surveys, and Enterprise survey in South Georgia) have been included in the South Atlantic Information Management and GIS Centre and are available to on-going national spatial planning, inshore ecosystem-based fishery assessment, natural capital project, etc.	
<p>Output 1.</p> <p>Capacity Building for cetacean research.</p>	<p>Staff 1.1 x2 Project Staff employed and in place by 20th October 2016 for 2 years.</p> <p>Volunteers 1.2 Volunteer database with 20 names held within FC & SAERI specific to scientific field work with capacity for maintenance.</p> <p>1.3 x10 local volunteers provided with training in cetacean ID, survey methodology, distance estimation, safe boat operations, HSE (through classroom introduction and field work teaching component) and partake in survey.</p> <p>1.4 Established protocols for x2 per annum volunteer-ship interns from external bodies and partner organisations (during programme and a new personnel resource for the future).</p>	<p>Staff 1.1 Project manager in place since October 2016. The project officer concluded its contract after one year. Project assistants have been employed part-time since December 2017 to carry on with the planned activities.</p> <p>Agreements/contracts available on request at SAERI.</p> <p>Volunteers 1.2 FC established and manages the volunteer database in the Falklands Islands. The database includes about 30 active volunteers with different scientific background and field work skills and it is continually updated. The project manager can contact FC if/when there is a request for specific volunteers. Four volunteers have been enrolled by SAERI (in the Falklands volunteers need to have a work permit).</p> <p>Agreements/contracts available on request at SAERI.</p> <p>1.3 A total of 20 volunteers have been trained to cetacean ID and photo-identification methods through a dedicated one-day course held in Stanley in January and February 2018 (see section 3.2 for evidence). Until now, a total of 21 field work volunteers joined the dolphin's surveys and have been trained in cetacean ID, survey methodology, distance estimation, safe boat operations, and HSE (the volunteer agreement for each person is available on request at SAERI). Two high school students joined SAERI for a week internship and were trained in survey methodologies, photo-identification, and generation of distribution maps (student agreement available on request at SAERI).</p> <p>1.4 Protocols for internship, volunteering, and guests, and for collaboration with external bodies and partners are in place.</p> <p>Volunteer and research agreement available on request at SAERI.</p>	

	<p>1.5 x1 central communal store of cetacean survey and volunteer safety equipment established sufficient for 6 person survey teams for current and future research.</p> <p>Awareness</p> <p>1.6 Cetacean ID resources distributed to lodges and operators (x20) and available on-line and downloaded (x30 times).</p> <p>1.7 Web resources available on-line for cetacean ID, volunteer protocols, non-technical general interest articles & project outputs and accessible by volunteers and community (x visits / month).</p> <p>1.8 Published 4 articles in local media and 1 television news segment on Falklands news during project.</p>	<p>1.5 SAERI, FC and SMSG (the three on island organisations partnering in the project) are using different stores for the research and safety equipment. Items are available for research. The list of research equipment owned by this project available on request at SAERI.</p> <p>Awareness</p> <p>1.6 Cetacean ID resources have been mailed to 34 locations within the Falklands, including lodges, operators and main farmers (the list of locations is available on request at SAERI). Resources are available on the project page of SAERI website.</p> <p>1.7 Resources are available on the project page of SAERI website (see Annex 3). A total of 10 posts were published on SAERI Facebook page (m.facebook.com/profile.php?id=1854594054830087) and posts have been visited 4,003 times in total.</p> <p>1.8 One article has been published on the local newspaper, the Penguin News (see Annex 3). Three television interview (FITV) and one radio interview have been done. The cetacean awareness day have been carried out in on the 29th of July 2017, involving a more than 80 children (see section 3.1). Ten presentations have been done, including primary schools (in Stanley and in camp at Port Howard), Farmer week, Special event at the Stanley Museum, at the Environment Committee, etc. (available on request at SAERI). One webinar have been done within the Chartered Institute of Ecology and Environmental Management (CIEEM - www.cieem.net/cieem-webinars). An article has been published of the Sanctuary magazine of the Ministry of Defence (see section 3.1).</p>
<p>Activity 1.1 Steering group formed from Partners, MoU signed detailing roles and responsibilities.</p>		<p>Completed.</p>
<p>Activity 1.2 1.2 Project Manager (PM) & Project Officer (PO) job descriptions finalised by Steering Group and advertised internationally (partners assisting in recruitment publicity and applicant vetting).</p>		<p>Completed.</p>

<p>Activity 1.3 PM and PO recruited through interview, appointed, if not local relocate to Falkland Islands (allowance has been made for recruitment advertising, telephone interviews and relocation allowance / flights).</p>	<p>Completed (see indicator 1.1).</p>
<p>Activity 1.4 Current FI equipment and resources for cetacean survey assessed and resources compiled (what, who and where) with lacking equipment sourced through in-kind partner loan or sourced, purchased and freighted for project. Allowance has been made for ordering and freight times to the Falklands.</p>	<p>Completed.</p>
<p>Activity 1.5 Current equipment located in central pooled store and inventoried equipment list held. Where central pooling is unfeasible (Zodiac & RIB) agreement signed with partner/owner for availability.</p>	<p>Completed.</p>
<p>Activity 1.6 Volunteer database established and maintained in partnership with Falklands Conservation (FC), public media announcement and focussed targeting of personnel with biological training such as at FIG fisheries department. During the summer period in Falklands availability may at times be difficult and allowance is made for use of x2 interns to form the core of the volunteer group. Strong liaison with FC established in recruitment and training to mesh with potential parallel study on sei whales</p>	<p>Completed (see indicator 1.2).</p>
<p>Activity 1.7 Volunteer training resources established including cetacean ID guide, step-wise survey protocols, safe boating practises, HSE guidelines – provided and available in printed format and on-line.</p>	<p>Completed.</p>
<p>Activity 1.8 Training given to x10 local volunteers incorporating class-room taught introduction and field-example at local location. Experience and instruction given in distance estimation.</p>	<p>Completed. More training will occur during the last field work period in June-July 2018</p>
<p>Activity 1.9 Volunteer intern recruitment established with academic partners with capacity for x2 intern positions per annum / field season.</p>	<p>Completed.</p>

<p>Activity 1.10 Volunteer intern recruitment and arrival.</p>	<p>Completed.</p>
<p>Activity 1.11 Project web-page creation with on-going maintenance to include monthly update with general interest progress article, field blogs and final posting of project outputs. During periods of field survey at remote sites update may be limited but blog progress will be posted when available to provide community update.</p>	<p>Completed. Maintenance and updates in progress.</p>
<p>Activity 1.12 Regular update of local media with non-technical summary of activities and findings to promote project and awareness of inshore cetaceans. Penguin News (local newspaper) and FITV (local television station).</p>	<p>Completed. More material and awareness activities will be carried out in the next 6 months (see indicator 1.7-1.8).</p>
<p>Activity 1.13 Cetacean ID guide, summary project data and vessel procedures shared with FC to incorporate outreach to nascent cetacean watching enterprises and viewing clients to increase profile and understanding of inshore cetaceans.</p>	<p>Completed in part; in progress other parts (see indicator 1.6-1.7).</p>
<p>Output 2. Island-wide Transect Survey Island-wide population estimate and species distribution maps for Commerson's dolphin, Peale's dolphin and sei whale and model of abundance.</p>	<p>2.1 60 day island-wide vessel based transect survey undertaken and completed by April 2017.</p> <p>2.2 Island-wide population estimate and distribution maps for Commerson's dolphin, Peale's dolphin and sei whale published by July 2017 and available to stakeholders and FIG EPD.</p> <p>2.1 As discussed in the previous annual report and approved by Defra with a change request, the vessel survey was replaced by an aerial survey.</p> <p>The aerial survey covering the waters within 10km from the coast was successfully carried out between March and May 2017 (the delay was due to aircraft availability and weather conditions).</p> <p>Research agreement with Falkland Islands Government Air Service (FIGAS) available on request at SAERI. The Aerial Survey field report is available on request at SAERI.</p> <p>2.2 The analyses to estimate abundance are completed. Locally, results have been presented to stakeholders during several public presentations. Internationally, results will be presented to the European Cetacean Society Conference (ECS) in La Spezia in April 2018 (see in section 3.2). A scientific paper is also in preparation. Metadata have been produced and data are stored on the SAERI IMS-GIS website, and will be accessible by the public as soon as published.</p> <p>The estimation of the correction factor for the abundance estimates is in progress using a drone.</p>

	<p>2.3 Environmental and habitat covariant model of abundance at island-wide scale published by Dec 2017 and available to stakeholders and FIG EPD.</p> <p>2.4 Data available to marine planning and EIA assessments.</p>	<p>2.3 Data analyses will began in May 2018</p> <p>2.4 Data are stored on the SAERI IMS-GIS website and are available to marine planning and EIA assessments. Will be available to the public at the end of the project.</p>
<p>Activity 2.1 Review and collation of all extant data-sources on inshore cetaceans from disparate sources with archiving in one central location, secured within SAERI IMS & GIS centre.</p>		<p>Completed. <i>Zotero</i> library is continually updated with new entries.</p>
<p>Activity 2.2 Vessel availability and dates confirmed at earliest opportunity. A suitable vessel has been confirmed in planning however alternative vessels are limited and early confirmation will ensure vessel availability and that any maintenance periods are conducted in advance of requirements.</p>		<p>Completed.</p>
<p>Activity 2.3 Review and design confirmation of island-wide transect survey based upon pilot survey results. Design and procedures signed off by steering group.</p>		<p>Completed.</p>
<p>Activity 2.4 Survey execution plan and logistics including personnel, resources, timings, data collection protocols and HSE risk assessments and safe-working practises. Work practises and HSE applicable to the conditions of the Falklands and of sufficient standard to meet responsibilities to volunteers and academic institutions.</p>		<p>Completed.</p>
<p>Activity 2.5 60 day island-wide survey conducted in Feb/Mar 2017 to best coincide with seasonal sei whale occurrence inshore to maximise the ancillary benefits of the survey beyond the focal species of Commerson's dolphin and Peale's dolphin.</p>		<p>Completed.</p>
<p>Activity 2.6 Analysis of results and publication of findings (August – January 2018).</p>		<p>Completed in part (see indicator 2.2-2.3)</p>
<p>Activity 2.7 Final report circulated to all local stakeholders and FIG EPD.</p>		<p>Field work report completed and circulated; most of analyses completed; paper in progress.</p>
<p>Activity 2.8 Storage of data and preparation of meta-data files with SAERI IMS & GIS centre.</p>		<p>Completed (see indicator 2.2, 2.4)</p>

<p>Output 3. Repeat transect focal study at 3 focal study sites. Data on finer-scale spatial drivers of distribution, seasonal occurrence and key habitats.</p>	<p>3.1 Field survey undertaken at 3 focal study sites during summer and winter periods (Nov/Dec 2016; Jun/Jul 2017, Nov/Jan 2017/18).</p> <p>3.2 Data on habitat association and key habitats for protection presented at completion of project.</p> <p>3.3. Data on seasonal patterns of occurrence between summer and winter survey periods presented at completion of project.</p>	<p>3.1 As discussed in the previous annual report, photo-identification is carried out in 3 locations over two summers and two winters. Three out of four focal surveys have been completed. The last survey is planned in June-July 2018. An extra survey was carried out in February-March 2018.</p> <p>The research agreement with SMSG for the use of the rigid hull inflatable boat and the focal Survey field reports is available on request at SAERI (see complete list on Annex 3).</p> <p>3.2 NA – Due at the end of 2018.</p> <p>3.3 NA – Due at the end of 2018.</p>
<p>Activity 3.1 Selection of 1 primary site and 1 secondary site for focal study in Year 1 based upon the results from the Darwin pilot study. A further 1-2 sites will be defined in Year 2 subject to the findings of the island-wide survey conducted in the first summer field season.</p>	<p>Completed.</p>	
<p>Activity 3.2 Design of repeatable focal area transect surveys and sampling protocol. Signed off by peer review of steering group.</p>	<p>Completed.</p>	
<p>Activity 3.3 Fieldwork execution plan including personnel, resources, accommodation, timings and bookings, data collection protocols, HSE risk assessment and safe-working practises for all components of focal study. Work practises and HSE applicable to the conditions of the Falklands and of sufficient standard to meet responsibilities to volunteers and academic institutions.</p>	<p>Completed.</p>	
<p>Activity 3.4 Field based study in year 1 at primary site and reduced effort at secondary site to encompass x2 summer seasons (2 months each) and x1 winter season (reduced sampling dependent upon weather). See timeline for clarity. Sufficient field data collection periods have been planned for to allow for weather conditions limited survey with weather downtime. Sites will be chosen to minimise the influence of weather by allowing survey in different zones depending upon wind direction. If severe attractive motion of dolphins to the survey boat platform occurs limiting the validity of habitat association survey will be supported by shore based observation and theodolite tracking which has the same resource cost.</p>	<p>Completed in part (see indicator 3.1).</p>	

<p>Activity 3.5 Identification of additional focal sites for Year 2 – sampling in Year 2 will be repeated at the primary and secondary sites determined within Year 1, but survey will be extended to additional sites in Year 2 if required. Additional sites only survey in the second year. See timeline for clarity.3.6</p>	<p>Completed.</p>		
<p>Activity 3.6 Collation and data analysis of results detailing patterns of occurrence, seasonality, level of association to habitats and identifying key habitats for protection.</p>	<p>In progress; due at the end of 2018.</p>		
<p>Activity 3.7 Final report circulated to all local stakeholders and FIG EPD.</p>	<p>NA – Due at the end of 2018.</p>		
<p>Activity 3.8 Preparation of meta-data files, submission and archiving of data in secure storage with SAERI IMS & GIS centre.</p>	<p>Completed up to date (see indicator 3.1).</p>		
<p>Output 4. Passive acoustic monitoring focal study at one of the focal study sites. Data on temporal drivers of distribution and seasonal sensitivity.</p>	<table border="0"> <tr> <td data-bbox="600 611 1086 1074"> <p>4.1 C-Pod PAM units (x7) deployed at 1 site for 18 months.</p> <p>4.2 Analysis of temporal occurrence by habitat type and temporal drivers (season, month, diel and tidal) presented by recorded attendance.</p> </td> <td data-bbox="1086 611 2078 1074"> <p>4.1 As discusses in the previous annual report, C-Pod will remain at the identified site for 16 months instead of 18. C-PODs were deployed in April 2017 in the locality 'Many Branch Harbour'(West Falkland), where only Commerson's dolphins are present (the methods do not allow differentiating between species, therefore a location where only one species is present has been selected). The first recovery was done in July 2017. Two out of the five C-PODs deployed were lost during a storm occurred between April and July 2017; the surviving C-PODs were recovered and re-deployed. The second and third recoveries were successfully carried out in November 2017 and March 2018. The final recovery is planned for June 2018.</p> <p>4.2 NA – Due in September 2018</p> </td> </tr> </table>	<p>4.1 C-Pod PAM units (x7) deployed at 1 site for 18 months.</p> <p>4.2 Analysis of temporal occurrence by habitat type and temporal drivers (season, month, diel and tidal) presented by recorded attendance.</p>	<p>4.1 As discusses in the previous annual report, C-Pod will remain at the identified site for 16 months instead of 18. C-PODs were deployed in April 2017 in the locality 'Many Branch Harbour'(West Falkland), where only Commerson's dolphins are present (the methods do not allow differentiating between species, therefore a location where only one species is present has been selected). The first recovery was done in July 2017. Two out of the five C-PODs deployed were lost during a storm occurred between April and July 2017; the surviving C-PODs were recovered and re-deployed. The second and third recoveries were successfully carried out in November 2017 and March 2018. The final recovery is planned for June 2018.</p> <p>4.2 NA – Due in September 2018</p>
<p>4.1 C-Pod PAM units (x7) deployed at 1 site for 18 months.</p> <p>4.2 Analysis of temporal occurrence by habitat type and temporal drivers (season, month, diel and tidal) presented by recorded attendance.</p>	<p>4.1 As discusses in the previous annual report, C-Pod will remain at the identified site for 16 months instead of 18. C-PODs were deployed in April 2017 in the locality 'Many Branch Harbour'(West Falkland), where only Commerson's dolphins are present (the methods do not allow differentiating between species, therefore a location where only one species is present has been selected). The first recovery was done in July 2017. Two out of the five C-PODs deployed were lost during a storm occurred between April and July 2017; the surviving C-PODs were recovered and re-deployed. The second and third recoveries were successfully carried out in November 2017 and March 2018. The final recovery is planned for June 2018.</p> <p>4.2 NA – Due in September 2018</p>		
<p>Activity 4.1 Selection of 1 focal study site (primary or secondary site determined in 3.1) for (x7) C-pod deployments in varying water depths and habitats for 18 month period.</p>	<p>Completed.</p>		
<p>Activity 4.2 Servicing of C-Pods on 4 month deployment schedule. Flexibility in deployment duration will assist in ensuring vessel availability for servicing visits.</p>	<p>Completed in part (see indicator 4.1).</p>		
<p>Activity 4.3 Analysis of temporal occurrence by habitat type and temporal drivers (season, month, diel and tidal). Loss of 1 or 2 units would limit but not preclude analysis. The pilot survey has field trialled different mooring configurations to remove kelp</p>	<p>NA – Analyses will begin after the first deployment. Final report due in September 2018.</p>		

fouling issues and no units have been lost.		
Activity 4.4 Define periods of increased utilisation and seasonal sensitivity for susceptibility to risks and for EIA.		NA – Analyses will begin after the first deployment. Final report due in September 2018.
Activity 4.5 Final report circulated to all local stakeholders, FIG EPD and PMS.		NA – Due in September 2018
Activity 4.6 Data submitted and data receipt from SAERI IMS & GIS centre.		NA – Due in September 2018
Output 5. Photo-identification focal study at 3 focal study sites for residency, dispersal, population structure & recruitment and population estimate. Residency, ranging patterns and spatial scale of movement with reference to susceptibility to localised impacts and appropriate scale of management units.	5.1 Centralise photo-ID database established on the islands with SAERI IMS & GIS centre.	5.1 The centralization of the database is in progress. The photo-ID database will be handled in at the end of the project.
	5.2 Photo-ID conducted at 3 distinct sites over 2 summer seasons and 1 winter period.	5.2 As discussed in the previous annual report, photo-identification is carried out in 3 locations over two summers and two winters, plus the extra survey of February-March 2018 (see indicator 3.1), and the data collected during the genetic survey in January 2017 (see indicator 6.1). Annex 3 provides the Photo-identification catalogues up to the analyses.
	5.3 Spatial ranging analysis of ranging patterns of same animal sightings.	5.3 In progress – Due in September 2018. Annex 3 provides the Focal Survey field reports, including preliminary analyses.
	5.4 Mark-recapture population estimate for dolphin populations at focal study sites.	5.4 In progress – Due in September 2018.
Activity 5.1 Establish Photo-ID & fin database. Unpopulated database established within SAERI.		In progress (see indicator 5.1).
Activity 5.2 Photography during survey, processing and archived GIS geo-tagged images to ID / GIS databases. Populated database held at SAERI. Assumes sufficient weather and boat conditions for photography. Weather downtime accounted for in planning.		In progress (see indicator 5.2).
Activity 5.3 Spatial analysis of ranging patterns of same animal sightings.		In progress (see indicator 5.3).

<p>Activity 5.4 Mark-recapture population estimate for dolphin populations at focal study sites.</p>	<p>In progress (see indicator 5.4).</p>
<p>Activity 5.5 Final report circulated to all local stakeholders, FIG EPD and PMS.</p>	<p>NA – Due in September 2018.</p>
<p>Activity 5.6 Data submitted and receipt from SAERI IMS & GIS centre.</p>	<p>Completed up to date (see indicator 5.1).</p>
<p>Output 6. Genetic diversity focal study at 2 of the focal study sites Population identification between South American con-specifics and potential sub-populations within the Falklands. Defining scale of management units</p>	<p>6.1 Biopsy collection conducted at 2 sites in first year to target 60 samples for each species.</p> <p>6.2 Training in biopsy sampling given to x2 project staff and x2 volunteers.</p> <p>6.3 Report and interpretation of results detailing genetic separation of populations from South America and Kerguelen Islands, and the degree of internal genetic separation into Falklands sub-populations between sampled sites.</p> <p>6.4 Physical samples held and available for potential future studies and analysis (including natural isotopes, contaminants, etc.).</p> <p>6.5 Genetic sequencing held in digital archives and nationally and internationally within Open access databases (e.g. GenBank).</p> <p>6.1 Biopsy collection was carried out in the three locations selected (see Figure 11) by Prof Scott Baker from the 3rd to the 12th of January 2017. Sixty samples of Commerson’s dolphins and 30 samples of Peale’s dolphins were collected. During the <i>Condor</i> expedition in the west (see section 3.1) another 30 samples of Peale’s dolphins were collected by the DOKE project staff. After obtaining the appropriate CITES permits from FIG, the samples were sent to the Hatfield Marine Science Center, Oregon State University, USA, on the 8th of April 2017.</p> <p>Annex 3 provides the Genetic field report.</p> <p>6.2 Scott Baker trained the DOKE project staff and the FIG veterinary Steve Pointing during his visit in January 2017; the project staff trained the interns in February 2017.</p> <p>6.3 Analyses have been carried out. A paper is in preparation.</p> <p>6.4 Some samples are stored at the SAERI office in the Falkland Islands, other samples are stored at the Hatfield Marine Science Center, Oregon State University, USA. Samples in the US will not be sent back to the FI where storing facilities are insufficient.</p> <p>6.5 In progress. Data will be available after publication.</p>

Activity 6.1 Training visit of experienced biopsy darter (x6 local people trained).	Completed.
Activity 6.2 Collection of small biopsy samples in conjunction with focal studies in Year 1 at primary and secondary focal study sites. Sufficient weather and boat conditions for collection of biopsy samples mitigated by accounting for weather downtime in planning. Dependent upon permit for collection of biopsy samples from Environmental Planning Office, Government of the Falkland Islands. This is currently in review and FIG has been fully included in the design of the current project from conception and is supportive of it.	Completed.
Activity 6.3 Field collection report on any reactive behaviours.	Completed.
Activity 6.4 Laboratory Analysis of Samples at Oregon State University.	Completed.
Activity 6.5 Report and interpretation of results detailing genetic separation of Falkland populations from South America and Kerguelen Islands, degree of internal genetic separation within Falklands sub-populations.	In progress (see indicator 6.3).
Activity 6.6 Final report circulated to all local stakeholders, FIG EPD and PMS.	In progress (see indicator 6.3).
Activity 6.7 Data submitted and receipt from SAERI IMS & GIS centre.	In progress (see indicator 6.3).
Activity 6.8 Return and archiving of physical samples for potential future studies and analysis (including natural isotopes, contaminants, etc.) Final decision to be taken on whether sample security and ease of access for study is best met by storage in Falklands or alternative facility.	Completed (see indicator 6.4).
Activity 6.9 Genetic digital sequencing data archived with international repository, e.g. GenBank.	In progress (see indicator 6.5).

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed) - if appropriate

N.B. if your application's logframe is presented in a different format in your application, please transpose into the below template. Please feel free to contact Darwin-Projects@ltsi.co.uk if you have any questions regarding this.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact: Inshore marine resources, habitats and species of the Falkland Islands are managed on a sustainable basis within an ecosystem based planning approach that ensures the long-term maintenance of biodiversity (Max 30 words)</p>			
<p>Outcome: Established baseline data on the abundance, distribution, natural history and genetic diversity of the Falklands inshore cetacean populations to provide a scientific basis for conservation and ecosystem-based marine management initiatives.</p>	<p>0.1 Biologically assessed Conservation Status and updated SAP available to ensure population-units have sufficient numbers, geographic distribution, genetic diversity and habitat to provide a stable population.</p> <p>0.2 Prioritised research plan published and available to mesh identified needs for future research and meshing of project data into planning initiatives, EIAs, etc.</p> <p>0.3 Project data are held within the South Atlantic Information Management and GIS Centre for inclusion within national planning i.e. Marine Spatial Planning/Ecosystem Assessment.</p>	<p>0.1 Submission of provisional SAP to FIG Environmental Planning Committee (FIG EPD) with baseline data appendix to Species Action Plan.</p> <p>0.2 Prioritised research plan submitted to FIG EPD along with SAP.</p> <p>0.3 Data received and meta data catalogue updated accordingly by SAERI IMS & GIS centre.</p>	<p>0.1 Outputs 2-6 provide sufficient timely data to inform on conservation status.</p> <p>Local stakeholders engage in SAP drafting for which focussed meetings and tele-conferencing of external stakeholders has been accounted for in budget.</p> <p>Annual scheduling of committee meeting dates is currently unknown and hence final approval may fall outside project completion dates however once entered into the approval process the draft SAP should progress with FIG and SAERI permanent staff.</p> <p>0.2 As above.</p> <p>0.3 None as funding and personnel are confirmed through MoU with FIG.</p>
<p>Output 1 Capacity Building for cetacean research.</p>	<p>Staff 1.1 x2 Project Staff employed and in place by 20th October 2016 for 2 years.</p>	<p>Staff 1.1 Contract of employment with SAERI.</p>	<p>Staff 1.1 Project partners assisted in recruitment and vetting in timely manner to ensure qualified staff with capacity to train others.</p>

	<p>Volunteers</p> <p>1.2 Volunteer database with 20 names held within FC & SAERI specific to scientific field work with capacity for maintenance.</p> <p>1.3 x10 local volunteers provided with training in cetacean ID, survey methodology, distance estimation, safe boat operations, HSE (through classroom introduction and field work teaching component) and partake in survey.</p> <p>1.4 Established protocols for x2 per annum volunteer-ship interns from external bodies and partner organisations (during programme and a new personnel resource for the future).</p> <p>1.5 x1 central communal store of cetacean survey and volunteer safety equipment established sufficient for 6 person survey teams for current and future research.</p> <p>Awareness</p> <p>1.6 Cetacean ID resources distributed to lodges and operators (x20) and available on-line and downloaded (x30 times).</p> <p>1.7 Web resources available on-line for cetacean ID, volunteer protocols, non-technical general interest articles & project outputs and accessible by volunteers and community (x visits / month).</p> <p>1.8 Published 4 articles in local media</p>	<p>Volunteers</p> <p>1.2 Volunteer database on SAERI mainframe with maintenance included in staff job description / contract (Office Administrator).</p> <p>1.3 Training course attendance and feedback forms recorded from attendees, field survey log.</p> <p>1.4 x2 interns present within Falklands during 4 month field season and on SAERI records and volunteer insurance.</p> <p>1.5 Inventory of central store and equipment available for cetacean research held by SAERI & FC.</p> <p>Awareness</p> <p>1.6 Print shop distribution and web-page statistics.</p> <p>1.7 Web-page, blog and facebook page statistics</p> <p>1.8 Copy of news articles within local media</p>	<p>Volunteers</p> <p>1.2 Assistance and coordination with FC (project partner) to share and coordinate existing volunteer register and capacity. Targeted recruitment to those with biological experience within islands.</p> <p>1.3 Training will be coordinated with FC to obtain synergy with sei whale project and maximise numbers and availability.</p> <p>1.4 Effective promotion and recruitment with partner organisation and others. Has been discussed and potential confirmed during project planning.</p> <p>1.5 Access to be shared between SAERI & FC of project capital equipment and coordinated.</p> <p>Awareness</p> <p>1.6 The draft cetacean-ID guide proved popular during the pilot study and upgraded version will be promoted and distributed.</p> <p>1.7 Web-page set up to record statistics and updates linked to Falklands community news pages.</p> <p>1.8 None - during the pilot survey high levels of interest were shown by all media outlets representing a high level</p>
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	and 1 television news segment on Falklands news during project.		of community interest and engagement.
Output 2 Island-wide Transect Survey Island-wide population estimate and species distribution maps for Commerson's dolphin, Peale's dolphin and sei whale and model of abundance.	2.1 60 day island-wide vessel based transect survey undertaken and completed by April 2017. 2.2 Island-wide population estimate and distribution maps for Commerson's dolphin, Peale's dolphin and sei whale published by July 2017 and available to stakeholders and FIG EPD. 2.3 Environmental and habitat covariant model of abundance at island-wide scale published by Dec 2017 and available to stakeholders and FIG EPD. 2.4 Data available to marine planning and EIA assessments.	2.1 Daily operation production report submitted to PMS immediately post survey. 2.2 Receipt from FIG EPD. 2.3 Receipt from FIG EPD. 2.4 Receipt and meta data from SAERI IMS & GIS centre.	2.1 Vessel availability has been confirmed but as there are few alternatives early confirmation of a replacement will allow scheduling and minimise any maintenance risks in advance of survey. Weather downtime allowance has been incorporated in duration. 2.2 Pilot survey has defined sampling effort and protocols to ensure statistically robust results. 2.3 Sufficient animals and covariates collected for analysis. Pilot study determined encounter rate and sampling based upon this. 2.4 None as funding and personnel are confirmed through MoU with FIG.
Output 3 Repeat transect focal study at 3 focal study sites. Data on finer-scale spatial drivers of distribution, seasonal occurrence and key habitats.	3.1 Field survey undertaken at 3 focal study sites during summer and winter periods (Nov/Dec 2016; Jun/Jul 2017, Nov/Jan 2017/18). 3.2 Data on habitat association and key habitats for protection presented at completion of project. 3.3. Data on seasonal patterns of occurrence between summer and winter survey periods presented at completion of project.	3.1 Daily operation production report submitted to PMS immediately post field survey work. 3.2 Receipt from FIG EPD. Receipt and meta data from SAERI IMS & GIS centre. 3.3 Receipt from FIG EPD. Receipt and meta data from SAERI IMS & GIS centre.	3.1 Pilot project results allow definition of sample sites in first year with additional sites determined after island-wide survey. Weather downtime has been allowed for in survey periods. Sites selected to minimise weather/sea-state impacts. Vessel attraction may influence results however a number of alternative sampling regimes are available to reduce influence and will be confirmed and applied. Winter work will be of lower effort. Day-length and weather conditions have been allowed for.

			3.2 & 3.3. None as funding and personnel are confirmed through MoU with FIG
Output 4 Passive acoustic monitoring focal study at one of the focal study sites. Data on temporal drivers of distribution and seasonal sensitivity.	4.1 C-Pod PAM units (x7) deployed at 1 site for 18 months. 4.2 Analysis of temporal occurrence by habitat type and temporal drivers (season, month, diel and tidal) presented by recorded attendance.	4.1 Survey log submitted to PMS and deployment periods detailed in final report submitted to FIG EPD. 4.2 Receipt from FIG EPD. Receipt and meta data from SAERI IMS & GIS centre.	4.1 Loss of some units would limit the level of data but not preclude analysis. Pilot survey has modified moorings to reduce kelp fouling and no units have been lost. Winter conditions may limit winter servicing however flexibility in deployment periods allow scheduling for vessel availability and weather. 4.2 None as funding and personnel are confirmed through MoU with FIG.
Output 5 Photo-identification focal study at 3 focal study sites for residency, dispersal, population structure & recruitment and population estimate. Residency, ranging patterns and spatial scale of movement with reference to susceptibility to localised impacts and appropriate scale of management units.	5.1 Centralise photo-ID database established on the islands with SAERI IMS & GIS centre. 5.2 Photo-ID conducted at 3 distinct sites over 2 summer seasons and 1 winter period. 5.3 Spatial ranging analysis of ranging patterns of same animal sightings. 5.4 Mark-recapture population estimate for dolphin populations at focal study sites.	5.1 MoU internally within SAERI for provision of database. 5.2 Photos entered on populated database at SAERI with statistics on entry numbers. 5.3 Receipt from FIG EPD. Receipt and meta data from SAERI IMS & GIS centre. 5.4 Receipt from FIG EPD. Receipt and meta data from SAERI IMS & GIS centre.	5.1 Internal agreement between project staff and SAERI. 5.2 Not all dolphins need be identifiable. Analysis of photos suggests sufficient numbers of Commerson's, with lesser number of Peale's, will be identifiable to provide for analysis. 5.3 & 5.4 None as funding and personnel are confirmed through MoU with FIG.
Output 6 Genetic diversity focal study at 2 of the focal study sites Population identification between South American con-specifics and potential sub-populations within the Falklands. Defining scale of management units	6.1 Biopsy collection conducted at 2 sites in first year to target 60 samples from each species. 6.2 Training in biopsy sampling given to x2 project staff and x2 volunteers. 6.3 Report and interpretation of results detailing genetic separation of populations from South America and Kerguelen Islands, and the degree of internal genetic separation into Falklands sub-populations between	6.1 Field report detailing any reactive reactions submitted to FIG EPD. 6.2 Training feedback forms collated. 6.3 Receipt from FIG EPD. 6.4 Receipt of storage. 6.5 Final data archived with international digital repository i.e. GenBank with receipt and access. Receipt and meta data from SAERI IMS & GIS centre.	6.1 Allowance made for weather downtime and if unable to collect during first sampling period training will be given to local operatives for continuation during focal studies. 6.2 Dates scheduled in advance to confirm volunteer availability. Project staff will be given experience and can subsequently assist with training. 6.3 Sufficient sample sizes obtained

	<p>sampled sites.</p> <p>6.4 Physical samples held and available for potential future studies and analysis (including natural isotopes, contaminants, etc.).</p> <p>6.5 Genetic sequencing held in digital archives and nationally and internationally within Open access databases (e.g. GenBank).</p>		<p>(see above)</p> <p>6.4 Final decision to be taken on whether sample security and ease of access for study is best met by storage in Falklands or alternative facility to encourage these additional analyses.</p> <p>6.5 International storage is standardised and available being encouraged by peer review journal whilst national storage is confirmed through MoU with FIG.</p>
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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)

1.0 Capacity Building & Awareness for Cetacean Research

1.1 Steering group formed from Partners, MoU signed detailing roles and responsibilities.

1.2 Project Manager (PM) & Project Officer (PO) job descriptions finalised by Steering Group and advertised internationally (partners assisting in recruitment publicity and applicant vetting).

1.3 PM and PO recruited through interview, appointed, if not local relocate to Falkland Islands (allowance has been made for recruitment advertising, telephone interviews and relocation allowance / flights).

1.4 Current FI equipment and resources for cetacean survey assessed and resources compiled (what, who and where) with lacking equipment sourced through in-kind partner loan or sourced, purchased and freighted for project. Allowance has been made for ordering and freight times to the Falklands.

1.5 Current equipment located in central pooled store and inventoried equipment list held. Where central pooling is unfeasible (zodiac & RIB) agreement signed with partner/owner for availability.

1.6 Volunteer database established and maintained in partnership with Falklands Conservation (FC), public media announcement and focussed targeting of personnel with biological training such as at FIG fisheries department. During the summer period in Falklands availability may at times be difficult and allowance is made for use of x2 interns to form the core of the volunteer group. Strong liaison with FC established in recruitment and training to mesh with potential parallel study on sei whales.

1.7 Volunteer training resources established including cetacean ID guide, step-wise survey protocols, safe boating practises, HSE guidelines – provided and available in printed format and on-line.

1.8 Training given to x10 local volunteers incorporating class-room taught introduction and field-example at local location. Experience and instruction given in distance estimation.

1.9 Volunteer intern recruitment established with academic partners with capacity for x2 intern positions per annum / field season.

1.10 Volunteer intern recruitment and arrival.

1.11 Project web-page creation with on-going maintenance to include monthly update with general interest progress article, field blogs and final posting of project outputs. During periods of field survey at remote sites update may be limited but blog progress will be posted when available to provide community update.

1.12 Regular update of local media with non-technical summary of activities and findings to promote project and awareness of inshore cetaceans. Penguin News (local newspaper) and FITV (local television station).

1.13 Cetacean ID guide, summary project data and vessel procedures shared with FC to incorporate outreach to nascent cetacean watching enterprises and viewing

clients to increase profile and understanding of inshore cetaceans.

2.0 Island-wide Transect Survey

2.1 Review and collation of all extant data-sources on inshore cetaceans from disparate sources with archiving in one central location, secured within SAERI IMS & GIS centre.

2.2 Vessel availability and dates confirmed at earliest opportunity. A suitable vessel has been confirmed in planning however alternative vessels are limited and early confirmation will ensure vessel availability and that any maintenance periods are conducted in advance of requirements.

2.3 Review and design confirmation of island-wide transect survey based upon pilot survey results. Design and procedures signed off by steering group.

2.4 Survey execution plan and logistics including personnel, resources, timings, data collection protocols and HSE risk assessments and safe-working practises. Work practises and HSE applicable to the conditions of the Falklands and of sufficient standard to meet responsibilities to volunteers and academic institutions.

2.5 60 day island-wide survey conducted in Feb/Mar 2017 to best coincide with seasonal sei whale occurrence inshore to maximise the ancillary benefits of the survey beyond the focal species of Commerson's dolphin and Peale's dolphin.

2.6 Analysis of results and publication of findings (August – January 2018).

2.7 Final report circulated to all local stakeholders and FIG EPD.

2.8 Storage of data and preparation of meta-data files with SAERI IMS & GIS centre.

3.0 Repeat Transect Surveys at 3 focal study sites

3.1 Selection of 1 primary site and 1 secondary site for focal study in Year 1 based upon the results from the Darwin pilot study. A further 1-2 sites will be defined in Year 2 subject to the findings of the island-wide survey conducted in the first summer field season.

3.2 Design of repeatable focal area transect surveys and sampling protocol. Signed off by peer review of steering group.

3.3 Fieldwork execution plan including personnel, resources, accommodation, timings and bookings, data collection protocols, HSE risk assessment and safe-working practises for all components of focal study. Work practises and HSE applicable to the conditions of the Falklands and of sufficient standard to meet responsibilities to volunteers and academic institutions.

3.4 Field based study in year 1 at primary site and reduced effort at secondary site to encompass x2 summer seasons (2 months each) and x1 winter season (reduced sampling dependent upon weather). See timeline for clarity. Sufficient field data collection periods have been planned for to allow for weather conditions limited survey with weather downtime. Sites will be chosen to minimise the influence of weather by allowing survey in different zones depending upon wind direction. If severe attractive motion of dolphins to the survey boat platform occurs limiting the validity of habitat association survey will be supported by shore based observation and theodolite tracking which has the same resource cost.

3.5 Identification of additional focal sites for Year 2 – sampling in Year 2 will be repeated at the primary and secondary sites determined within Year 1, but survey will be extended to additional sites in Year 2 if required. Additional sites only survey in the second year. See timeline for clarity.

3.6 Collation and data analysis of results detailing patterns of occurrence, seasonality, level of association to habitats and identifying key habitats for protection.

3.7 Final report circulated to all local stakeholders and FIG EPD.

3.8 Preparation of meta-data files, submission and archiving of data in secure storage with SAERI IMS & GIS centre.

4.0 Passive Acoustic Monitoring

4.1 Selection of 1 focal study site (primary or secondary site determined in 3.1) for (x7) C-pod deployments in varying water depths and habitats for 18 month period.

- 4.2 Servicing of C-Pods on 4 month deployment schedule. Flexibility in deployment duration will assist in ensuring vessel availability for servicing visits.
- 4.3 Analysis of temporal occurrence by habitat type and temporal drivers (season, month, diel and tidal). Loss of 1 or 2 units would limit but not preclude analysis. The pilot survey has field trialled different mooring configurations to remove kelp fouling issues and no units have been lost.
- 4.4 Define periods of increased utilisation and seasonal sensitivity for susceptibility to risks and for EIA.
- 4.5 Final report circulated to all local stakeholders, FIG EPD and PMS.
- 4.6 Data submitted and data receipt from SAERI IMS & GIS centre.

5. Photo-identification study for residency, dispersal, population structure & recruitment and population estimate.

- 5.1 Establish Photo-ID & fin database. Unpopulated database established within SAERI.
- 5.2 Photography during survey, processing and archived GIS geo-tagged images to ID / GIS databases. Populated database held at SAERI. Assumes sufficient weather and boat conditions for photography. Weather downtime accounted for in planning.
- 5.3 Spatial analysis of ranging patterns of same animal sightings.
- 5.4 Mark-recapture population estimate for dolphin populations at focal study sites.
- 5.5 Final report circulated to all local stakeholders, FIG EPD and PMS.
- 5.6 Data submitted and receipt from SAERI IMS & GIS centre.

6. Genetic diversity

- 6.1 Training visit of experienced biopsy darter (x6 local people trained).
- 6.2 Collection of small biopsy samples in conjunction with focal studies in Year 1 at primary and secondary focal study sites. Sufficient weather and boat conditions for collection of biopsy samples mitigated by accounting for weather downtime in planning. Dependent upon permit for collection of biopsy samples from Environmental Planning Office, Government of the Falkland Islands. This is currently in review and FIG have been fully included in the design of the current project from conception and is supportive of it.
- 6.3 Field collection report on any reactive behaviours.
- 6.4 Laboratory Analysis of Samples at Oregon State University.
- 6.5 Report and interpretation of results detailing genetic separation of Falkland populations from South America and Kerguelen Islands, degree of internal genetic separation within Falklands sub-populations.
- 6.6 Final report circulated to all local stakeholders, FIG EPD and PMS.
- 6.7 Data submitted and receipt from SAERI IMS & GIS centre.
- 6.8 Return and archiving of physical samples for potential future studies and analysis (including natural isotopes, contaminants, etc.) Final decision to be taken on whether sample security and ease of access for study is best met by storage in Falklands or alternative facility.
- 6.9 Genetic digital sequencing data archived with international repository, e.g. GenBank.

Annex 3 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	-
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	Yes
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	No – All documents listed in Annex 3 are accessible at www.south-atlantic-research.org/research/doke/191public-outreach or on request at SAERI
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	