

Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

To be completed with reference to the “Writing a Darwin Report” guidance:
(<http://www.darwininitiative.org.uk/resources-for-projects/reporting-forms>). It is expected that this report
will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2020

Darwin Plus Project Information

Project reference	DPLUS082
Project title	Conserving Falklands' whale populations: addressing data deficiencies for informed management
Territory(ies)	Falkland Islands
Lead organisation	Falklands Conservation
Partner institutions	British Antarctic Survey, University of California Santa Cruz, Sea Mammal Research Unit, Shallow Marine Surveys Group, New England Aquarium, Ketos Ecology, Happy Whale, Fundación MERI
Grant value	£298,552.00
Start/end dates of project	2018-04-01 to 2021-03-31
Reporting period (e.g. Apr 2019-Mar 2020) and number (e.g. Annual Report 1, 2)	1 April 2019 to 31 March 2020 AR 2
Project Leader name	Andrew Stanworth
Project website/blog/social media	http://www.falklandsconservation.com/ https://www.facebook.com/FalklandsWhale
Report author(s) and date	Caroline Weir, 28 April 2020

1. Project summary

Anecdotal evidence suggests that endangered sei whales (*Balaenoptera borealis*: Figure 1A) have increased in the waters around the Falkland Islands since the 1990s, and that southern right whales (*Eubalaena australis*: Figure 1B) have begun to over-winter since 2017. There is considerable interest in whales throughout the local community. The increasing occurrence of whales can provide opportunities for tourism development, but also increases their potential exposure to coastal human activities including shipping, oil development, aquaculture and tourism. The development of Marine Spatial Planning (MSP) in the Falklands has faltered. Direct approaches for establishing Marine Protected Areas (MPAs) have raised considerable concerns among stakeholders regarding the selection of suggested sites and associated management proposals.

This project aims to ground discussions about MSP, MPAs and Environmental Impact Assessments (EIA), in the contexts of developing Key Biodiversity Areas (KBAs) for whales and managing human marine activities alongside increasing whale occurrence. The project will collect a range of field data that will help to fill in data gaps regarding the distribution and ecology of whales in Falklands' waters, with a view to recognising important areas for their long-term management.

(A)



(B)



Figure 1. Project study species in the Falkland Islands: (1) sei whale and (2) southern right whale. Images courtesy of Falklands Conservation.

This project, led by Falklands Conservation (FC), uses a multi-disciplinary approach to collect the key information relevant to achieving practical management and spatial conservation measures for endangered sei whales and other whale species in the Falkland Islands. The approach includes:

1. Boat surveys at two study sites that were identified as candidate Key Biodiversity Areas due to anecdotally-evidenced high whale densities (Figure 2).
2. Assessment of the spatial distribution, group composition and habitat preferences of whale species. Photo-identification will be used to assess population size, inter-annual site fidelity, movements and social affiliation. Faecal and genetic sampling will provide data on diet and genetic diversity. Time-depth-recorder (TDR) tagging will provide information on foraging and dive behaviour.
3. A two-year acoustic monitoring feasibility study, to examine the spatio-temporal occurrence of vocalising whales at the sites.
4. An increase in local awareness, engagement and capacity in the Falkland Islands with regard to sei and right whales, through media releases, stakeholder meetings and capacity-building.

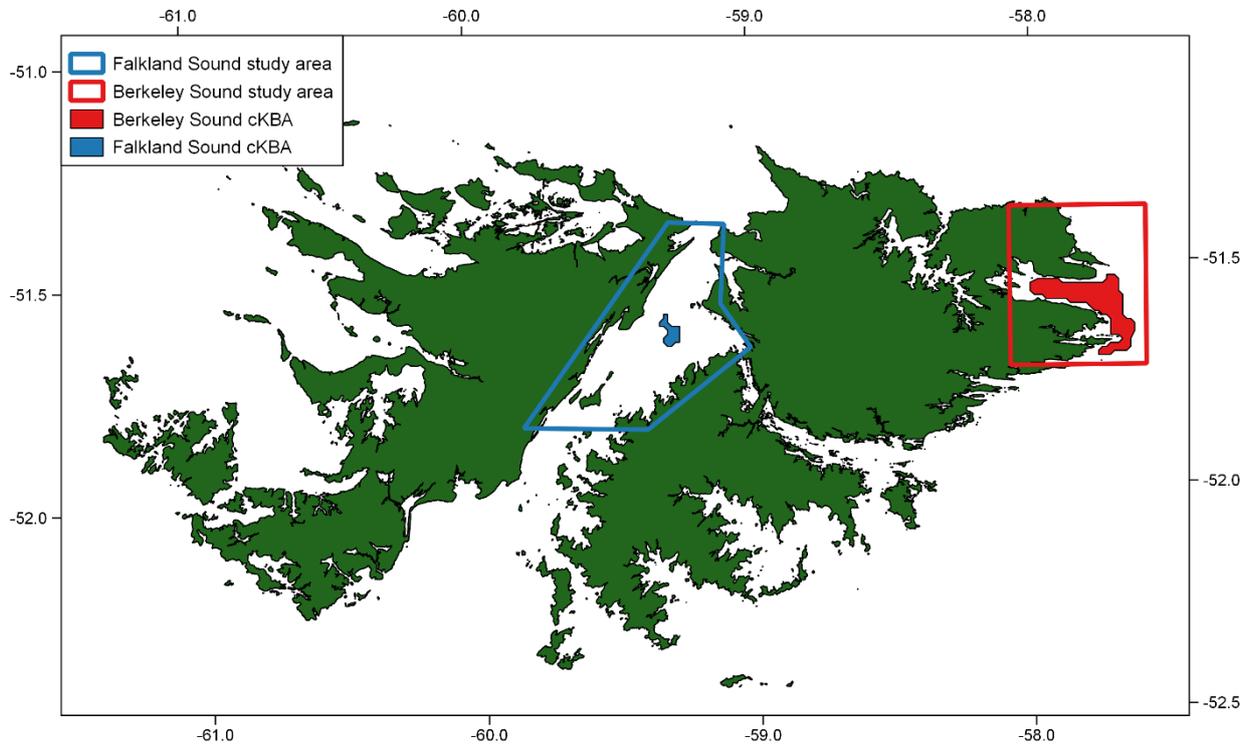


Figure 2. Location of two coastal candidate Key Biodiversity Areas (cKBAs) for sei whales, comprising the core project study sites in the Falkland Islands: (1) Berkeley Sound and (2) Falkland Sound. Southern right whales were studied only in the wider Berkeley Sound region.

2. Project stakeholders/partners

The project partners (who also comprise the steering group) and project stakeholders (who comprise key decision-makers, landowners adjacent to the study sites, local research organisations, and marine commercial and recreational users) have been kept informed of the project progress during the second year of the project as follows:

Project partners:

- The SMSG (project partner) provided boat support to the project throughout the 2019 field season and early 2020 season (evidenced in Annex 6 and 7), and communications between the FC Project Officer (PO), Caroline Weir, and SMSG regarding survey planning have consequently been almost daily during the fieldwork seasons to discuss weather and logistics for boat work.
- The PO has had regular contact with Jen Jackson at BAS during 2019 and 2020 via email and Skype calls, including the formation of a MoU to cover the analysis of the samples collected during the Darwin Plus project and discussions on sample collection and exportation to BAS for analysis (evidenced in Annex 8). Andy Stanworth (the FC Conservation Manager) visited BAS in Cambridge during August 2019 to meet with Jen Jackson and discuss progress with the genetic and isotope work. BAS have also assisted with CITES permit applications, with information for the 2020 export permits being sent to Mike Dunn on 30 March 2020 (evidenced in Annex 9).
- Following completion of the tagging component of the project in March 2019, a draft scientific manuscript is under preparation by project partner Ari Friedlaenders's team and email correspondence has been maintained during the data analysis and manuscript preparation stages. An in-person meeting was held between Caroline Weir, Andy Stanworth and Ari Friedlaender during his visit to Stanley on 12 March 2020, which discussed project progress.
- During December 2019, Caroline Weir attended the World Marine Mammal Conference in Barcelona (evidenced in Annex 4). Meetings were held at the conference with project

partners Sal Cerchio (acoustic component) and Ted Cheeseman (HappyWhale) regarding project progress. Both meetings were followed up with email correspondence.

- On 30 January 2020, Ted Cheeseman visited FC in Stanley and a meeting was held with Caroline Weir. Joint effort to promote the sei whale project via HappyWhale and IAATO was discussed, along with strategies for developing the sei whale photo-identification work including potentially testing the use of AI.
- Very regular and ongoing Skype and email discussions have been held between Caroline Weir and Sal Cerchio (project partner) throughout the year, regarding the planning and progress of the acoustic deployments. Sal has played an active role in discussing when deployments would occur and provided advice on potential deployment durations as new information emerged on water temperatures at the sites and on battery life. Two batches of data from the first deployments were shipped to Sal during 2019, and the analysis is underway including the testing of automated call detectors. A preliminary report was submitted by Sal to FC on 23 March 2020, describing the initial findings of the acoustic analysis from the first two deployments in Berkeley Sound (evidenced in Annex 7).
- Steering group meetings with all available project partners were held via Skype on 19 September 2019 and on 26 February 2020. Project partners Jen Jackson, Sal Cerchio and Paul Brewin (SMSG) attended both meetings, with apologies from others who were not available on those dates. The minutes from both meetings were distributed to the full steering group, along with full project update documents for those that had missed the meetings (evidenced in Annex 3).
- During much of 2019 and 2020, Caroline Weir has received guidance from project partner Phil Hammond (SMRU) to produce an abundance estimate and model the distribution of sei whales in West Falkland (a joint manuscript is in preparation). While that fieldwork originates prior to the current Darwin project, the outputs of that work comprise fundamental support to the KBA application which forms a major component of the Darwin project and core outcome.

Stakeholder engagement:

Key stakeholder group:

- A project update document describing the accomplishments of the 2019 field season was distributed to the stakeholders in September 2019, with a further update distributed ahead of the 2020 field season in January (both evidenced in Annex 4). Both included an invitation to stakeholders to participate in boat surveys during 2020 and experience the fieldwork first hand.
- The FC CEO Esther Bertram met with Member of the Legislative Assembly Right Honourable Leona Roberts who is Environmental Portfolio holder for Falkland Islands Government Assembly on 19 June 2019 and 12 February 2020, and provided updates on the project progress particularly with regard to KBAs (evidenced in Annex 3).
- On 4 March 2020, a meeting was held between the PO and Ander De Lecea, the SAERI project manager for the Darwin+ Marine Management Areas project, to discuss the KBA and the MMA plans for the Falklands.

Wider stakeholders in the community:

- Project bulletins were posted on the Falklands Conservation Facebook page throughout the year. Regular updates on the project fieldwork were posted on a dedicated Falkland Islands Whale Project Facebook page (<https://www.facebook.com/FalklandsWhale>) featuring the Darwin logo and frequently shared by the Darwin Initiative and others (evidenced in Annex 4). As of the 31 March 2020, the page had 1,562 followers and many active engagements.
- Articles on the Darwin project were published in the Falklands Conservation magazine (May 2019 and November 2019) and the FC newsletter (July 2019), which were disseminated to members (including many stakeholders) both in the Falklands and

internationally (evidenced in Annex 4). Additionally, a roundup of the 2019 field season was published in the Penguin News on 25 October 2019 (evidenced in Annex 4), and would have been read by the majority of the Falkland Islands community.

- An article to explain the project and request images of sei whales was published in the IAATO members newsletter in January 2020 (evidenced in Annex 4). Caroline Weir subsequently received several visits from expedition leaders and staff when they were in Stanley, to discuss the project and report sei whale sightings.

3. Project progress

We submitted a change request to Darwin to approve a new logframe on 7 April 2020 (see Section 8). That new logframe is used in Annex 2 and for the completion of Section 3.

3.1 Progress in carrying out project Activities

Output 1. Awareness of the project is raised locally and internationally.

Activities under Output 1 are all progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe. The PO has liaised with FC's Communications and Marketing Officer (CMO) to maximise local media outputs (Activities 1.1 and 1.2), including publishing project articles in the FC magazine and newsletters, articles in the Penguin News, and a school visit during February 2020. Regular stakeholder updates (Activity 1.2) and social media updates (Activity 1.3) have been published. International effort has been raised through two meetings and correspondence with project partner Ted Cheeseman to upload images to HappyWhale (Activity 1.4), and a presentation at an international marine mammal conference by the PO. All of these activities have been comprehensively evidenced in Annex 4 and summarised point-by-point in the Annex 1 logframe. Activities 1.5 and 1.6 are scheduled for production and delivery during Year 3 of the project, but are expected to complete on time.

Output 2. Knowledge of, and capacity for, cetacean research is increased locally.

Activities under Output 2 are all progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe. During Year 2, extensive effort was made to take local volunteers out on the whale boat surveys (Activities 2.1 and 2.3), and the total number of volunteers that have now had the opportunity to participate in the research has exceeded that anticipated at the start of the project. Additionally, some local landowners in the community have collected samples from dead whales under the guidance of the PO, and submitted them for inclusion in the genetic component of the project. That has increased their understanding of the project and their knowledge of sample collection and what such samples are used for. The PO completed Activities 2.2 and 2.4 during Year 2, producing risk assessments and holding a training day for the local community to learn about cetacean research and carry out their own surveys as part of an ongoing citizen science programme. With regard to Activity 2.5, an interim inventory was completed on schedule in August 2019, and a full end of project inventory of equipment will be carried out in Year 3 following completion of the fieldwork. Comprehensive evidence for the indicators and activities under Output 2 is provided in Annex 5 and is summarised point-by-point in the Annex 1 logframe.

Output 3. Key Biodiversity Area (KBA) assessment.

Most activities under Output 3 are progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe. However, the project has been unable to achieve the total number of surveys planned to occur at Falkland Sound (Activity 3.1), due to logistical factors in relation to boat availability, weather and COVID-19 (see Section 9 for a full discussion). Survey coverage at Berkeley Sound during Year 2 has been achieved as expected (Activity 3.1). Activities 3.2 to 3.4 are all proceeding on schedule, with a draft KBA technical report being produced during February and March 2019 and the final application expected to occur before the end of 2020. Evidence for the indicators and activities under Output 3 is provided in Annex 6 and summarised point-by-point in the Annex 1 logframe.

Output 4. Passive acoustic monitoring (PAM) study.

Activities under Output 4 are all progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe, although, due to logistics and equipment breakage, there have been some small gaps in acoustic data collection (outlined in Section 9). Those are not considered to affect the overall delivery or results of the acoustic component. The PO and acoustic project partner Sal Cerchio have communicated continuously during Year 2 with regard to the acoustic deployments (Activity 4.1), including a reassessed deployment schedule distributed to the steering group in February 2020 based on updated water temperature data acquired from the first year of acoustic deployments. A risk assessment was produced by the PO for acoustic deployments, and communications have been maintained with SMSG regarding boat charters to deploy/recover the devices (Activity 4.2). Sound files were posted to Sal in the US after each of the first two deployments on portable hard drives, and the initial datasets have been used for a preliminary analysis and examination of automated detection classifiers which was summarised in an interim report by Sal (Activities 4.3 to 4.4). Activity 4.5 is scheduled for production and delivery during Year 3 of the project, but is expected to complete on time. Evidence for the indicators and activities under Output 4 is provided in Annex 7 and is summarised point-by-point in the Annex 1 logframe.

Output 5. Foraging ecology, trophic role and diet of sei whales

Activities under Output 5 are all progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe. Activities 5.1 and 5.2 were completed in Year 1. Activity 5.3 has been ongoing during Year 2 and will continue into Year 3; faecal sampling has occurred whenever possible, but is obviously limited by the number of whale faecal events that are observed during the survey. In Year 2, all except one of the observed faecal events were sampled. Preparation for Activity 5.4 was underway at the end of Year 2, but is scheduled for the start of Year 3. Activity 5.5 is scheduled for production and delivery during Year 3 of the project, but is expected to complete on time and the signing of a MoU between FC and BAS during Year 2 includes a timeframe for analysis and delivery of results. Evidence for the indicators and activities under Output 5 is provided in Annex 8 and is summarised point-by-point in the Annex 1 logframe.

Output 6. Population identity, structure and genetic diversity of Falkland whales.

Activities under Output 6 are all progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe. Activity 6.1 was completed during Year 2. Activities 6.2 and 6.3 have occurred throughout the field seasons in 2019 and 2020; the number of collected samples from sei whales has been lower than hoped due to their elusive behaviour, but the number of samples from southern right whales has exceeded expectations and will contribute significant to knowledge of population structure in the Falklands and in the wider southern Hemisphere region (figures are summarised in the Annex 1 logframe). Activity 6.4 was progressing at the end of Year 2 via email correspondence between the PO and BAS CITES personnel, and acquisition of the permits and shipment of the samples is scheduled for early Year 3 (May 2020). Activity 6.5 is scheduled for production and delivery during Year 3 of the project, but is expected to complete on time. Evidence for the indicators and activities under Output 6 is provided in Annex 9.

3.2 Progress towards project Outputs

Output 1. Awareness of the project is raised locally and internationally.

Output 1 is progressing according to schedule, and progress against the individual Indicators is outlined fully in the Annex 1 logframe. Local communities in the Falklands knew that there were whales around the islands, but little was understood of which species, how many, or why they were present in the Falklands. This project has successfully raised overall awareness of whales amongst the community, via extensive use of local Falklands media such as the Penguin News (which reaches most of the Falklands' population) and FC magazine/newsletters, and social media channels. A school visit by the CM and PO in February 2020 explained to school children the two main whale species and their differences and behaviour. Awareness of the project has been achieved internationally via the PO's presentation at the Barcelona conference in December 2019 which attracted considerable interest, and via collaborations with international partner organisations which are resulting in many potential scientific manuscripts and an international online presence via HappyWhale. The Facebook page has achieved well over 1,500 followers by the end of Year 2, most of which are international. The most popular posts have

reached 7,000 to 23,000 people. All outputs have mentioned Darwin, and almost all have included the Darwin project logo. Evidence for Output 1 is provided in Annex 4.

Output 2. Knowledge of, and capacity for, cetacean research is increased locally.

Output 2 is progressing according to schedule, and progress against Indicators is provided fully in the Annex 1 logframe. Little local capacity for cetacean research existed in the Falklands prior to the project, but this has been increased during Year 2 through the extensive participation of volunteers in assisting on the whale boat surveys and via a dedicated training course to establish a shore-based citizen science programme. In all cases, volunteers have learnt about the different species of cetaceans in Falklands waters and how to identify them, and have participated in photo-identification and faecal sampling (boat surveys) or learnt how to complete data forms and conduct their own surveys (shore training). A large amount of equipment will remain in the Falklands at the end of the project for use in future research, and inventories of those equipment will be available for future researchers. Evidence for Output 2 is provided in Annex 5.

Output 3. Berkeley Sound and Falkland Sound are assessed for their suitability as whale Key Biodiversity Areas (KBAs).

The baseline situation for Output 3 was that two very small cKBAs were identified during 2016 in Berkeley Sound and Falkland Sound respectively based on anecdotal data, and had been highlighted as priorities for research to determine whether they might qualify for full KBA status. This project has made significant progress towards that assessment during Year 2, with the completion of boat surveys at both sites. However, as explained in Section 9, boat survey coverage at Falkland Sound has not been as comprehensive as anticipated. Currently, it is unlikely that the survey data from Falkland Sound would be sufficient for a KBA assessment by itself. However, the data collected during 2019 at both sites have been merged with a larger dataset containing data collected by FC in 2017 and 2018, and are being used to propose a single, larger-scale KBA instead of the six small sites that were suggested in 2016. The full rationale for a single larger KBA is provided in the draft KBA technical report that was produced towards the end of Year 2. Consequently, the datasets collected during the Darwin project at both sites have contributed directly to a KBA sei whale assessment, which will be progressed towards completion during Year 3. Evidence for Output 3 is provided in Annex 6. We expect that Output 3 will be achieved within the project timeframe, and the current Indicators are considered appropriate.

Output 4. Establishment of a passive acoustic monitoring (PAM) study of baleen whales to assess temporal presence and the validity of long-term monitoring using PAM.

There had been no previous acoustic monitoring of baleen whales in the coastal waters around the Falkland Islands. This project aimed to assess whether PAM could be used to monitor whales long-term in the region, and to use the year-round PAM dataset to investigate whale temporal occurrence. Output 4 has progressed according to schedule, and progress against specific Indicators is provided fully in the Annex 1 logframe. The three acoustic devices that were first deployed in Berkeley Sound in December 2018, have been continuously recovered, serviced and redeployed throughout Year 2. We have now acquired 16 months of data in Berkeley Sound, and the method has succeeded beyond our expectations despite a few glitches (outlined in Section 9). As such, we expanded the acoustic effort with a single deployment in Falkland Sound in October 2019, with the aim of collecting one full year of data at that site. Initial analysis results suggest that the acoustic data produced from the devices is usable, the whales are vocalising, and analysis of whale presence/absence per hour, day, week or month should be possible. Barring unforeseen circumstances, we expect that Output 4 will be completed on time. The Indicators remain appropriate. Evidence for Output 4 is provided in Annex 7.

Output 5. An assessment of the foraging ecology, trophic role and diet of sei whales in the Falklands.

Prior to the Falklands Conservation projects starting in 2017, no information was available on why sei whales use Falklands waters. While it became apparent during the first season that the whales were feeding, details of their diet, foraging behaviour and trophic relations were not available but have several direct management implications. During the Darwin project we are addressing this data gap through Output 5. We deployed suction cup tags on two sei whales in

Year 1 to collect data on their behaviour while feeding (i.e. dive depth, dive duration, spatial movements). Throughout the field seasons in Years 2 and 3, we are collecting faecal samples for diet analysis, and tissue samples for stable isotope analysis, which should clarify where the whales fit into the marine ecosystem and what prey species are driving their occurrence in Falklands' waters. In Year 2 we have continued progress towards those goals (see responses to Indicators in the Annex 1 logframe, and the evidence provided in Annex 8), through the collection of sei whale faecal samples, and the collection of tissues (skin and blubber via biopsying of live animals, and also the bone, baleen and tissue of dead animals). This output is therefore progressing on schedule. The analysis of samples and reporting of results are all scheduled for Year 3. Three of the five Indicators for Output 5 relate to the data analysis and reporting stages, and it is expected that these will be delivered on schedule by project completion (2021).

Output 6. Clarify the population identity, structure and genetic diversity of Falkland whales.

No information was available prior to the project on the genetic diversity of baleen whales in the Falkland Islands. During Year 2 we have continued progress towards Output 6 (see responses to Indicators in the Annex 1 logframe, and the evidence provided in Annex 9), through the collection of tissue samples from both sei whales and southern right whales via live biopsy sampling and the sampling of dead animals. Progress has particularly exceeded our expectations with southern right whales, for which we were able to acquire 49 biopsy samples in the 2019 winter season that will contribute to improved knowledge of population structure in the Falklands and in the wider southern Hemisphere region. Efforts to collect biopsy samples from both species will continue throughout the remainder of the 2020 field season in Year 3. Two of the three Indicators for Output 6 relate to the data analysis and reporting stages by project partner BAS, and it is currently expected that those will be delivered on schedule by project completion (2021).

3.3 Progress towards the project Outcome

The main stated project outcome is "*Decision-makers, including community representatives, have up-to-date, robust data allowing them to make better informed, evidence-based decisions to support the establishment of Key Biodiversity Areas and management of the wider marine environment in the Falkland Islands.*"

Key progress made towards achieving the project outcome during Year 2 includes:

- Completion of bi-annual steering group meetings via Skype to guide the project and ensure that resulting data are robust and applicable to achieving the project outcome (Indicator 0.1, evidenced in Annex 3).
- Completion of bi-annual meetings with FIG MLAs to keep them informed of the project progress and ensure ongoing support (Indicator 0.2, evidenced in Annex 3).
- Meeting with the project manager for the Darwin+ Marine Management Areas project, to discuss the KBA and the MMA plans for the Falklands.
- Ongoing fieldwork data collection to produce a current, robust dataset pertinent to informing whale conservation and management. This has included ongoing boat surveys and acoustic deployments (detailed against Indicators for Outputs 3 and 4 in the Annex 1 logframe), compiling the 2019 whale photo-identification data (Output 3, evidenced in Annex 6), and commencing the acoustic analysis (Output 4, evidenced in Annex 7). These data are being used to directly support the development of the KBA application, via the assessment of the sei whale datasets against the KBA criteria.
- Preparation of the draft KBA technical report and application (Indicator 0.5, evidenced in Annex 3) was completed by the end of Year 2 and has already received some informal feedback from the KBA committee. It will be distributed to stakeholders and decision-makers early in Year 3 for feedback and to garner local support ahead of a formal application to the KBA committee.

Two further Indicators (0.4 and 0.5) for the project outcome are scheduled for delivery in Year 3 of the project, but are expected to be completed on target. In combination, progress towards the

project outcome is considered to be excellent, with good support currently being achieved towards the proposal of a KBA for whales in Falklands' waters.

3.4 Monitoring of assumptions

We identified a number of Important Assumptions in our project logframe (see Annex 2), and these are summarised below. The project includes a significant fieldwork component that is heavily influenced by weather conditions and by the logistical constraints of operating in relatively remote areas and with limited resources. All of the identified Assumptions in the logframe hold true, although most have been well-managed through adequate planning. We additionally encountered a new assumption that had not been anticipated, which was the cessation of fieldwork due to the COVID-19 outbreak (see Section 9).

Assumptions 0.1 and 0.2: Steering group members and decision makers have an interest and availability to attend bi-annual meetings.

Comments: These risks hold true. Not all steering group members have been able to attend the bi-annual meetings (see listed attendees in the minutes in Annex 3). However, we have distributed electronic updates to those members who could not attend (evidenced in Annex 3), and the PO has held independent meetings with almost all steering group members over the course of Year 2 (see Section 2 of this report). Meetings between the FC CEO and FIG MLAs have also been influenced by availability, but nevertheless two such meetings were held during Year 2 (evidenced in Annex 3).

Assumption 0.3: Decision makers and community representatives will utilise data provided to make evidence-based decisions.

Comments: This risk holds true. However, we plan to progress the KBA with an FC-led application that will request a letter of support from decision-makers and relevant stakeholders. This will reduce time constraints on their participation.

Assumption 1.5: Submission of peer reviewed papers depends on field results and timeframe for analysis.

Comments: This risk holds true. The submission of papers is not expected until Year 3, but we anticipate that the expected two manuscripts should be accomplished within the timeframe.

Assumptions 2.1 to 2.3: Volunteers will have availability and desire to attend fieldwork sessions and outreach activities.

Comments: These risks hold true. It is challenging to organise participation due to the short notice nature of the fieldwork, with boat surveys usually not confirmed until the previous evening or the same morning as the trip due to the need for the boat skipper and the PO to consult last minute weather forecasts and choose survey days carefully to ensure health and safety commitments are met. Nevertheless, during Year 2 we have managed to take the full stated allocation of volunteers on the boat surveys, and spaces on the field training event for citizen science were also fully booked.

Assumptions 3.1 to 3.3: Weather, availability and logistics will not interrupt boat-based survey work. Whales are present in the sites during the fieldwork periods.

Comments: Careful and extensive logistical planning by the Project Officer has overcome these risks as far as is reasonably possible. Nevertheless, the fieldwork in 2020 has been subject to several factors beyond our control, notably: (1) the lack of availability of an experienced skipper for three weeks in February, which meant that the boat chartered from project partner SMSG was not permitted to work in Falkland Sound; (2) the subsequent cancellation of a 10-day yacht survey planned for Falkland Sound during March due to COVID-19; and (3) the cancellation of all fieldwork from 27 March 2020 due to COVID-19. We have been unable to manage those risks, since no other suitable boats are available in Falkland Sound, and the COVID-19 situation is beyond our control and could not have been reasonably anticipated.

Assumption 3.4: KBA criteria will remain constant throughout the project lifetime, and the process will not be hindered by the lack of global population data.

Comments: This risk holds true. However, the Project Officer has invested a lot of time in investigating these matters and discussing with Justin Cooke, the IUCN Red List assessor for sei whales, how best to address the issue of lack of global information. A meeting was also held between Caroline Weir and Charlotte Boyd (Chair, KBA Standard and Appeals Committee) at the Barcelona conference in December 2019 to discuss approaches. A full technical report was produced by March 2020 outlining how the KBA criteria have been addressed for sei whales (evidenced in Annex 6). Additionally, a Skype call was held, and email correspondence has been maintained, with David Díaz, the KBA co-Regional Focal Point for Latin America and Caribbean, to work through these issues. While we cannot guarantee that the KBA application will be successful at this stage, we are confident that the issue of limited data has been addressed as fully as it could have been.

Assumption 4.1: Static acoustic devices will remain in situ, be recoverable, and will collect high quality data.

Comments: This risk holds true, and there is an inherent element of risk in deploying these devices in the marine environment (many similar projects have lost equipment). Indeed, some loss of acoustic devices over the project timeframe was expected. However, the mooring design was carefully discussed with Sal Cerchio and to date the devices have functioned correctly, have all been recovered and have produced good-quality data. One unanticipated risk was that we assumed that we would always be able to go to sea and attempt to recover the devices, but the recent cessation of fieldwork due to COVID-19 may affect our ability to get to Falkland Sound and try to recover the device there. We are unable to mitigate for that eventuality at this time.

Assumption 4.2: Acoustic analysis will be completed on schedule.

Comments: This risk holds true. However, the preliminary report from Sal Cerchio based on the first two datasets suggests that automatic classifiers will function adequately for the sei whale calls (evidenced in Annex 7). It remains to be established whether the same is true of southern right whale calls, and that will be investigated during Year 3.

Assumption 5.1: Sei whales can be approached sufficiently closely to deploy TDRs (pilot study).

Comments: Sei whales are elusive study subjects and this risk remains true. However, the tagging component of the project was fulfilled with two suction cup tags deployed on whales during March 2019.

Assumption 5.2: The target of 50 faecal samples is achievable within the project timeframe.

Comments: This risk holds true. At the end of Year 2 (31 March 2020), the project had collected 34 faecal samples from sei whales, and only one additional faecal event had been observed from the boat but not collected (due to distance and logistics). The availability of faecal material is outside of our control and entirely dependent on the whales, and we have had several survey days with lots of sei whales but not a single faecal event observed.

Assumptions 5.3 to 5.4, and 6.2: Samples are exported to BAS in adequate time for analysis.

Comments: This risk holds true. The export of samples to the UK is constrained by the once-a-year availability of the BAS vessel to transport them frozen, and by the timeframe required to acquire CITES import/export permits. The current situation with COVID-19 may also affect this component, but that is developing daily and is not yet clear.

Assumption 6.1: The field team are able to collect 50 biopsy samples during the boat surveys.

Comments: This risk remains true. As anticipated, we have struggled to acquire biopsy samples from sei whales due to their behaviour, with only three samples in 2019 and a further three to date in 2020. However, 49 biopsy samples were collected from southern right whales during 2019. This is due to the differing characters of the two species with regard to their behaviour and approachability.

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

The primary statement of strategic outcomes intended for the natural environment in the Falklands is the Biodiversity Framework 2016-2030. The Strategy integrates delivery of multilateral agreements (e.g. CBD Aichi targets) and defines a number of additional strategies and plans required for delivery in specific areas; however, these are not all complete. The Framework is threat-based with only a single priority - 'biosecurity and invasives'. Medium priority threats include Natural Resource Use and Visitors/Tourism, with Cross-cutting challenges of 'Lack of awareness' and 'Uncertainty/Lack of information'. These Cross-cutting challenges, in overlap with the medium threats, are those relevant to the current project and its whale focus.

Good overall progress has been made during Year 2 of the project towards addressing uncertainty and lack of information on key whale species. Eight months of boat survey data and 12 months of acoustic data were collected in the study sites during Year 2, providing a robust dataset on the spatial and temporal occurrence of endangered whale species. Further genetic and dietary data have been gathered to support broader understanding of the species and their ecology. This has been accompanied by awareness raising of the work and its relevance through meetings with senior government decision-makers, educational work with schools, a citizen science project facilitated by the project and supported by FIG, a focussed Facebook site, media releases and outreach work with volunteers.

The relevance to Natural Resource Use and Visitor/Tourism is in deriving data to support decision-making on potential development impacts on whales, currently including the development of the hydrocarbon and aquaculture industries, and in providing guidance to a small whale-watching tourism sector. Assessment of acoustic data and boat survey data generated this year will enhance understanding of how to assess potential impacts of development on whales. The FC-developed cetacean Code of Conduct (introducing guidance on how to minimise impacts to cetaceans from marine users) was formally accepted, and a subsequent leaflet produced by FIG through the Project Officers involvement.

The Ecoregions, Habitats, Species and Sites Strategy is the FIG Framework's mechanism for delivering Aichi Targets 11, 12, 13 and 15. Preventing extinction (Target 12) and improving conservation status is particularly relevant for the 'endangered' sei whale and the Strategy specifically notes the requirements for Ecoregion plans for the nearshore environment and species action plans for priority species. The priority species list is due to be updated, but an action plan for sei whales is anticipated and the project work this year will serve to inform that and any nearshore Ecoregion plan during their future development. The conservation of marine areas of importance for biodiversity (Target 11) is also particularly relevant and the strategy also has goals for 'key sites' which includes Key Biodiversity Areas. During Year 2 of the project significant progress has been made in working towards the latter objective, including meetings with KBA authorities, the production of a Technical Report to outline how the Falklands would meet the global criteria for a sei whale KBA, and the planning of stakeholder consultations. Additionally, the KBA proposal is expected to directly influence subsequent designations of MPAs and MMAs in the Falklands; progression of the latter is likely in Year 3 of the project. This designation of nearshore waters around the Falkland Islands as a global KBA would be the first for sei whales anywhere in the world.

5. OPTIONAL: Consideration of gender equality issues

The Project Officer delivering this whale project is female, as are the majority of the Falklands Conservation staff. The Conservation Manager and the boat skipper are male. We have both female and male project partners. Of the 17 people that we have taken out to sea in a voluntary capacity (i.e. not including FC staff, boat skippers, or tag personnel) on the project to the end of March 2020, 9 were female and 8 were male, indicating an almost even gender equality.

6. Monitoring and evaluation

The project logframe (Annexes 1 and 2) provides a clear set of Indicators and Outputs against which the project can be monitored and evaluated. The logframe has been updated during 2020

in response to comments from the external reviewer of AR1, to ensure that the Indicators are now all time-bound. Together with the stated timeframe for delivery, it is now very clear how the project should progress over time.

The Outputs and Activities of the project clearly contribute to the overall project Outcome, since the project Outcome is based on the provision of an updated dataset on the distribution, abundance and ecology of sei whales at two sites, and then compiling that information into datasets and reports that will facilitate management actions with regard to KBAs and marine spatial planning in the Falklands. The progress of the project with regard to the Outcome can be clearly cross-referenced with the stated indicators of achievement. In most cases, those are straightforward to measure, for example where it is stated that a certain number of samples will be collected, magazine articles produced, or volunteers trained. Most of the Indicators stated for this project relate either to such clear markers of progress, or to the end deliverables (most notably the technical report and meta-data).

There have been no changes to the M&E plan over the reporting period.

Falklands Conservation is running the project, and the project partners (who are also the Steering Committee) each input on their own particular areas of expertise. Given the multi-faceted nature of this particular project, the partner organisations are each involved in very specific components of the project and therefore input primarily on their own specialities. For example, the BAS is involved in the genetic work, Sal Cerchio the acoustic work etc. All project partners are aware of the stated project deliverables; two steering group meetings have been held annually, and electronic updates are also disseminated to the group bi-annually. During 2020, in-person meetings were successfully held between the PO and almost all of the project partners (see Section 2), and additionally there have been extensive Skype discussions with key partners in the Year 2 deliverables include Sal Cerchio regarding the acoustic deployments and Jen Jackson regarding sample collection and export.

7. Lessons learnt

During Year 2 of the project we had learnt from Year 1 to allow more time for the shipping of equipment to the Islands, and this year we planned well ahead to allow additional time for shipping and arranged for staff to hand-carry equipment with them when flying where possible. We also learnt from the success of our acoustic deployments during Year 1, and expanded that acoustic effort to the second site of Falkland Sound during Year 2 in an attempt to collect additional data on whale occurrence there to counteract the reduced boat coverage.

Things that did not work very well in Year 2 included the breakage of the transponding hydrophone, which was an accident incurred during the field operation and perhaps influenced by the stress of it being the very first acoustic recovery of the project. Subsequent acoustic recoveries have been carried out more slowly, and have learnt the lesson to take time and ensure that the hydrophone is back onboard the boat prior to the engines being switched on. The challenges that we experienced with delays in shipping equipment during Year 1 were also experienced again with the replacement transponding hydrophone (shipped from Canada). Little can be done to mitigate that, except to bear it in mind when planning future projects.

Finally, the COVID-19 situation experienced at the end of Year 2 reminded us that even with the best planning in the world then sometimes things happen that are completely outside of our control.

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

The reviewer of the annual report for Year 1 made five main recommendations. We outline below how those have been addressed:

1. The project logframe would benefit from reworking. It was suggested by the reviewer that a revision of the project logframe should be discussed with Darwin. Prior to making any amendments to the logframe, the Project Officer Caroline Weir had email correspondence with Darwin during January 2020 to request advice/feedback on how best to alter it to address the reviewer comments. We received some helpful feedback from Kelly Forsythe and Victoria Pinion, which has guided our revisions. The submission of a formal change request to accompany any amendments to a logframe is a requirement from Darwin, so we submitted that change request on 7 April 2020. We anticipate that the revised logframe should address the reviewer's feedback. It incorporates more time-bound Indicators for the various outputs.
2. An updated Project Implementation Timeline would be useful. We have now revised the timeline alongside the logframe so that the two reflect one another. A copy of the updated project timeline is provided as Annex 10.
3. Be sure to provide evidence to support claims of progress. We acknowledge that while adequate evidence was provided in AR1 to support Output 1, the evidence for Outputs 2 to 5 was comparatively lacking. To address that, we have included separate Annexes in AR2 for each of the project Outputs. This ensures that we have provided evidence to support progress in all areas, ranging from photographs of fieldwork to copies of invoices and permits.
4. Do you have any indication of when the candidate KBAs might be fully designated? Based on the data collected, we will not propose that the existing small candidate KBAs will be designated, but rather will be replaced by the proposal for a single larger KBA of more appropriate spatial scale to a large mobile marine predator such as a sei whale. We have drafted an application and an associated Technical Report (see Annex 3), that will undergo stakeholder consultation and review early in Year 3 before being formally submitted. We have been informed that the timeframe from submission to response is around two months. However, the KBA process is in its infancy and consequently timeframes may evolve beyond our control (particularly given the current situation with the COVID-19 pandemic). What are the 'considerable concerns among stakeholders regarding the selection of suggested sites and associated management proposals' mentioned in the Project Overview? Overall, the initial approach of issuing MPA locations and management proposals without stakeholder engagement led community members question methods, motives and selection processes and caused concern that MPA development would be dictated, rather than consulted upon. Some proposed MPA locations were used for safe anchorage or passage by leisure and industry vessels. However, management proposals for MPAs were for limiting passage and anchoring without strong evidence that these would be significantly damaging, or a threat to the locations. This caused concern amongst local marine users on the basis that prohibition of such activities was unjustified and unsafe. Local industry representatives were concerned that proposals may prohibit economic diversification in the future. Local NGOs were concerned as they struggled to see justification for the proposals in regard to what was being put forward as there was no rationale provided by government on the need for, and selection of, the sites or the management proposals.
5. The Section on Project support to environmental and/or climate outcomes in the UKOT's could usefully provide more detail. We have expanded on that section in the Year 2 report to provide a greater level of detail, which we believe should address this comment.

9. Other comments on progress not covered elsewhere

The overall progress of the project during Year 2 has been good, with the Outputs and Activities progressing on schedule and in accordance with the project timeframe. However, there are two

areas of the project to expand upon here, based on difficulties encountered and our efforts to overcome them.

Breakage of acoustic equipment

We experienced a short but significant issue with the acoustic deployments in April/May 2019. On 23 April, while undergoing the first recovery of the acoustic devices, the transponding hydrophone cable was accidentally snapped by the boat propeller causing damage/loss. Without the transponding hydrophone then we were unable to recover the third device (it remained on the seabed) and were also unable to reliably redeploy the two devices that had already been recovered that day prior to the equipment breakage. The manufacturer of the hydrophone (Vemco) was contacted on the same day as the accident to initiate a replacement, which, due to its specialised nature, had to be shipped from Canada. Unfortunately, delays in collection and shipment by DHL meant that the new hydrophone did not arrive in the Falklands until 18 May. Poor weather in the subsequent week meant that we could not proceed with the deployment/recovery of devices until 27 May. Consequently, we incurred a 5-week data gap for two of the acoustic devices, although some data was collected throughout that period by the single device that remained on the seabed. This incident was unforeseen and accidental, and the significant delays incurred in shipping of the replacement hydrophone to the Falklands were the responsibility of DHL and beyond our control.

Survey coverage at the two focal sites

In the annual report for Year 1 we described some logical and weather constraints that had resulted in a lower acquisition of planned survey coverage at Falkland Sound compared with Berkeley Sound. It was noted that the risks of weather, logistics and boat availability had been identified in the Important Assumptions for Output 3, but that in practice those risks had resulted in a disproportionately higher impact on data collection at the more remote and challenging site of Falkland Sound compared with Berkeley Sound. It was also noted that the situation would be reviewed at the end of the 2019 field season in late August 2019.

The survey coverage achieved at the two focal sites during the 2019 field season and Year 2 section of the 2020 field season is summarised in Table 1.

Table 1. Summary of planned and achieved small boat surveys at Berkeley Sound and Falkland Sound.

Site	Yr 1: Jan–Mar 2019		Yr 1: Apr–Aug 2019		Yr 2: Jan–Mar 2020		Total Darwin	
	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Achieved
Berkeley Sound	12	14	20	22	12	11	44	47
Falkland Sound	10	3	10	4	10	0	30	7
Total	22	17	30	26	22	11	74	54

While the overall number of surveys planned and achieved in each season was similar during 2019, slightly more surveys than planned were achieved in Berkeley Sound (primarily due to the tagging work and to the continuation of the surveys through the southern right whale season into August 2019) and far fewer than planned were achieved in Falkland Sound (Table 1). The underlying reasons for the lower number of surveys in Falkland Sound (explained fully in AR1) are multiple and cannot be easily overcome. However, the situation worsened in 2020, with none of the planned surveys for February and March in Falkland Sound being realised. This was the result of:

1. The lack of availability of an experienced skipper for three weeks in February 2020, which meant that the boat chartered from project partner SMSG was not permitted to work in Falkland Sound;
2. Adverse weather conditions;

3. In an attempt to acquire coverage at the site, FC planned to take advantage of an available yacht between 21 March and 4 April to survey in Falkland Sound. However, the situation with COVID-19 affected that charter which in the end had to be cancelled (see below);
4. The cancellation of all fieldwork in the Falklands from 27 March 2020 due to COVID-19 (see below).

We have been unable to overcome these limitations, since no other suitable boats are available in the relatively remote site at Falkland Sound, and the COVID-19 situation is beyond our control and could not have been reasonably anticipated. In total, over the duration of the Darwin project so far, only 23% of the Falkland Sound surveys have been achieved (Table 1).

In recognition of the difficulties being encountered at Falkland Sound, during a progress review at the end of the 2019 field season it was decided to use some of the unspent Falkland Sound boat budget to purchase an additional set of acoustic equipment to deploy at that site to try and increase the amount of information on whales. The additional acoustic device was shipped to the Falklands and was deployed in the centre of Falkland Sound (within the cKBA) on 22 October 2019. That device is still deployed and we hope to be able to recover it as soon as fieldwork is permitted to re-commence following the COVID-19 situation. We also made use of an available yacht platform during January 2020 to collect one day of data in the southern part of Falkland Sound, which successfully encountered sei whales and generated some photo-identification images.

COVID-19

On the afternoon of 26 March 2020, the Falkland Islands Government (FIG) issued a press statement that announced that it was moving its COVID-19 response to the next stage of the infectious diseases plan. This included:

“We are now advising everyone to reduce all non-essential activities until further notice; everyone should stay at home where they can, and work from home where possible.

Please follow our guidance on social distancing. Essential activities, at this stage, include critical and key work, where this cannot be done from home. Essential work categories are listed below.”

As a consequence, both Falklands Conservation and boat charter partner SMSG, were required to cease fieldwork activities from the 27 March.

This step had been anticipated for several weeks given the worldwide crisis, and had already affected the planning of the project fieldwork since late February. For example:

1. During February, a plan developed to charter a yacht that had become available for the period 21 March to 4 April, in order to try and acquire intensive coverage in Falkland Sound to address the ongoing data deficit at that site. The contract was signed and deposit paid during March, and the subsequent planning of fieldwork at both sites and of the acoustic recoveries/deployments, was made around that trip. However, the yacht crew contacted FC on 19 March to say that they were required to quarantine for a week due to COVID-19 and would not be available for the charter until the 26th/27th March. Unfortunately, in the meantime (23 May) one of the two FC team members became sick and was also requested to isolate at home for 10 days. The charter then had to be cancelled completely following FIG’s updated response to COVID-19 issued on 26 March.
2. Due to the above planned yacht survey in March 2020, fieldwork with the small boat from mid-March was prioritised for Berkeley Sound because it was envisaged that we would shortly have an intensive period in Falkland Sound on the yacht (which was subsequently cancelled);
3. An acoustic deployment in Falkland Sound had also been scheduled for recovery and redeployment during the March yacht survey. Following cancellation of the yacht, the PO had planned to get to Falkland Sound with the small boat on the first available full good weather day, and the team were preparing for the 28th March which had an excellent

forecast. However, unfortunately the COVID-19 fieldwork shut-down happened from the 27th March. As things currently stand (i.e. as of late April 2020), we have been unable to recover that device and there are uncertainties about whether it will now be recoverable (due to heavy fouling over the summer and autumn adding weight to the device).

4. Because of the evolving situation with COVID-19, the last two surveys carried out during March 2020 in Falkland Sound were not full whale surveys, but rather were focussed on the recovery (21 March) and redeployment (26 March) of the three acoustic devices. Some data on whale occurrence and photo-ID were collected on both surveys; however, they were reduced in extent and in the amount of time working with the whales, because they took advantage of short weather windows to get the deployments completed ahead of a potential shutdown of the fieldwork. Consequently, the last good survey day in Berkeley Sound was on 14 March 2020.

A positive note

Despite the difficulties outlined above with what we acknowledged would be a challenging project from the outset, we would like to take the opportunity to emphasise that this project has also produced several notable successes over the course of Year 2:

1. With the exception of the 5-week data gap incurred for two of the acoustic devices described above, we have now collected a full 15 months of data in Berkeley Sound with all three devices being successfully recovered and redeployed on three occasions since the initial deployment. Moreover, the sound files are usable and contain numerous whale calls. The success of the acoustic component of the project has therefore greatly exceeded our expectations (losses of equipment are commonly experienced by such projects) and the devices have functioned extremely well.
2. Initial photo-identification results indicate that we have re-sighted several individual sei whales in Berkeley Sound during February/March 2020 that we also saw at the same site in February/March 2019 (Figure 3). These data (yet to be fully analysed) are providing valuable and novel information on the movements and inter-annual fidelity of sei whales.

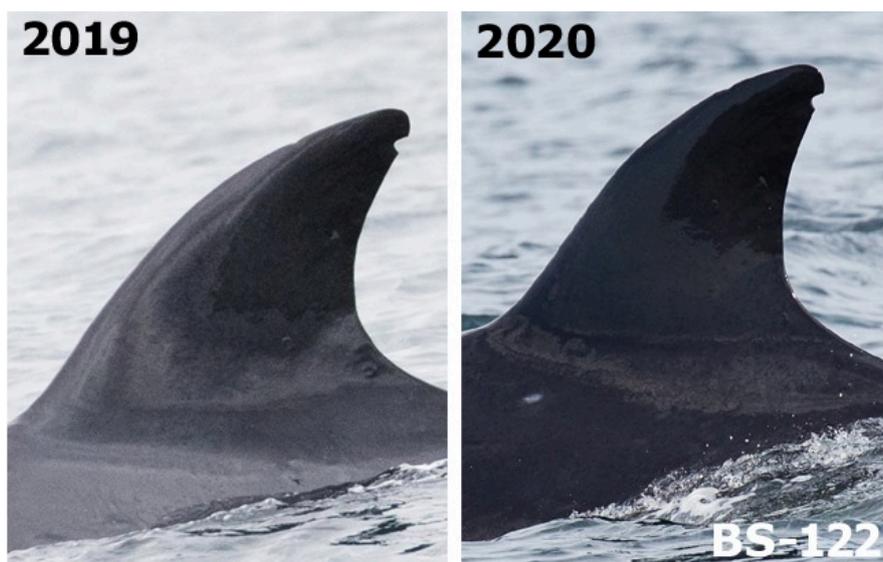


Figure 3. Individual sei whale sighted in Berkeley Sound in the two successive field seasons of the Darwin project.

3. The southern right whale field season between June and mid-August 2019 also exceeded all of our expectations, with the collection of 49 biopsy samples and numerous photo-identification images which will inform management within the Falklands and is also expected to lead to several international collaborations. Due to that success we plan to continue the fieldwork throughout August during 2020 to maximise data collection for that species.

4. The sei whale KBA application is progressing ahead of schedule, and the Technical Report and application have gained the support of several key international KBA and IUCN Red List personnel which is very encouraging. If designated, this will be the first such recognised area for sei whales anywhere globally, and the first KBA to be designated for any cetacean species, and would therefore represent a major accomplishment for the project.
5. A total of 17 volunteers have joined our Darwin boat surveys to date (well above our original aim of 10 volunteers), and many have emailed afterwards to express their enjoyment and interest to go again. Additionally, the Facebook whale page has grown to well over 1,500 followers, and some of the individual posts have attracted several thousand engagements (the maximum being over 24,000) and been widely shared across social media. There was also an excellent response amongst the scientific community to our presentations at the World Marine Mammal Conference. The outreach component of the project is therefore achieving good success both locally and internationally.

10. Sustainability and legacy

As described in Section 2, the whale project has been extensively promoted within the Falkland Islands, including via articles in the Penguin News that reach the majority of the Falklands' population, meetings with the FIG MLAs, stakeholder updates, via a public talk and radio interview in Stanley during March 2019, a school visit in February 2020, regular project updates on social media, and articles in the Falklands Conservation magazine and newsletters (all evidenced in Annexes 3 and 4). There is generally a widespread awareness of the whale project within the Falklands local community, and a growing interest in the whales which has resulted in many people travelling to Cape Pembroke during the winter to watch the southern right whales.

Local capacity has been increased via the provision of a training course in July 2019 which provided information on the cetacean species occurring around the Falklands, how to identify them, and how to complete a systematic shore-based survey and record data. This citizen project has the potential to continue indefinitely, maintaining interest and capacity in the Islands. Volunteers have also been actively encouraged to participate in boat surveys, with 17 people so far joining the PO on surveys to collect data on sei whales and right whales. Those people learnt field techniques such as photo-identification and faecal sampling, and moreover went away with a renewed enthusiasm for whales which is spread amongst the community by word of mouth.

The capacity of Falklands Conservation to be able to continue with whale research in the future has been enhanced by the regular attendance of a few permanent staff members on the boat surveys, and their use of field equipment under the instruction of the PO. FC's Conservation Manager (CM), Andy Stanworth, has also assisted the PO extensively with implementing the acoustic component of the project and taken sole charge of several deployments and recoveries, such that he is able to continue using the acoustic equipment beyond the end of the project. Additionally, the PO and CM received training from the tagging specialist during March 2019.

The project will complete at the end of March 2021, and a full Technical Report and associated datasets will be available to inform management and conservation decisions. The report will be distributed to stakeholders and MLAs to maximise awareness. Legacy elements will include the extra capacity achieved within the Falklands over the project timeframe (as outlined above), and the availability of robust data for whale management. Most notably, it is intended that the legacy will include the designation of a KBA for sei whales, which will recognise the Falkland Islands as a site of global importance for the species. It can be expected that this will be associated with significant publicity and global interest, and ensure security with regard to legacy, since KBAs have to be re-assessed every few years to ensure that the species/habitat still qualifies which will require commitment to keep monitoring sei whales. This legacy also includes supporting FIGs understanding of KBAs and non-statutory sites and of the designation process for other potential sites in the future.

11. Darwin identity

The Darwin Initiative logo has been used on project outputs whenever possible, notably in the Penguin News article published on 25 October 2019 (Annex 4), in the FC magazine articles (Annex 4), in the citizen science training course outputs (Annex 5), on the presentation at an international marine mammal conference (Annex 4), and in social media on the Falkland Islands Whale Project banner image (Annex 4). Additionally, we have regularly linked Darwin Initiative in our posts on the Facebook Falkland Islands Whale Project page, and the posts have been subsequently shared by Darwin to their own Facebook page. The logo is also included on all documents that have been distributed to the steering group and the stakeholders (Annex 3 and 4). We believe the frequent mentions of Darwin Initiative in our outreach and the use of the logo where possible, have identified the Darwin-funded whale work as a clearly distinct project.

There is already a good understanding of the Darwin Initiative within the Falkland Islands, as they have funded several previous projects in the Islands including the recent Dolphins of the Kelp project.

12. Safeguarding

Falklands Conservation has a number of policies that have been developed that relate to safeguarding, specifically: Safeguarding policy, Code-of-Conduct for Employees, Harassment and Bullying Policy, Safer Working Practices and Whistle-blowing. These policies are to ensure that FC is aware of these important issues and our downstream partners are too. They form the context and decision-making framework for identifying and managing any safeguarding issues. They will be increasingly integrated into organisational activities and shared with those FC work with. Falklands Conservation have had no registered issues since the implementation of these policies.

13. Project expenditure

Three project change requests were submitted to Darwin over the course of Year 2, all of which were approved:

1. 22 May 2019: A budget line change request was submitted to move funds to replace a broken hydrophone (see Section 9). This was accepted by email on 23 May 2019.
2. 26 June 2019: A budget line change request was submitted to purchase an additional acoustic device to be deployed in Falkland Sound (see Section 9). This was accepted by email on 12 July 2019.
3. 20 February 2020: A budget line change request was submitted to move some boat charter underspend to cover unforeseen extra costs in the Capital Equipment and Other Costs categories to cover conference attendance, the purchase of hard drives to store acoustic data, an additional camera lens and biopsy equipment, and a replacement crossbow. This was accepted by email on 21 February 2020.

The final amended values following these three change requests are used in the first column of Table 1. Please see actual finance claim forms as the final accounting for funds.

Table 1: Project expenditure during the reporting period (1 April 2019 – 31 March 2020)

Project spend (indicative) in this financial year	2019/20 D+ Grant (£)	2019/20 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 2019-2020 – if applicable

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
<p>Impact</p> <p>Baleen whale populations and their key habitats in the Falkland Islands are sustained over future decades via evidence-based management decisions.</p>		<p>We have made good progress with drafting a KBA application and supporting evidence-based technical report that will be taken forwards in Year 3 to recognise the Falkland Islands as a global biodiversity hotspot for sei whales.</p>	
<p>Outcome</p> <p>Decision-makers, including community representatives, have up-to-date, robust data allowing them to make better informed, evidence-based decisions to support the establishment of Key Biodiversity Areas and management of the wider marine environment in the Falkland Islands.</p>	<p>0.1 Project Steering Group established with update meetings held twice per year, to guide the project and ensure resulting data are robust.</p> <p>0.2 Bi-annual meetings held with FIG Heads of-Department, Members of Legislative Assembly.</p> <p>0.3 By 31 March 2021, a Technical Report is delivered, and subsequently provided to the FIG Environmental Committee during 2021.</p> <p>0.4 By the end of May 2021, the final project data are stored on the FC server and metadata are submitted to the IMS-GIS data centre.</p> <p>0.5 By project completion, decision-makers will understand and provide support for at least one KBA application for whales in the Falkland Islands.</p>	<p>0.1 Steering Group meetings were held in September 2019 and February 2020 (evidenced in Annex 3).</p> <p>0.2 Meetings were held between the FC CEO and FIG MLAs on 19 June 2019 and 12 February 2020 (evidenced in Annex 3).</p> <p>0.3 Some work commenced on the Technical Report during Year 2; however, this is not due until project completion.</p> <p>0.4 Project data have been collected throughout Year 2 and coded into spreadsheets. The IMS-GIS metadata summary sheets will be completed at the end of the field season.</p> <p>0.5 A draft KBA application (and supporting Technical Report) was produced during Year 2, and information on the KBA development was provided to FIG MLAs (evidenced in Annex 3).</p>	<p>0.1. Steering Group meetings planned for September 2020 and February 2021.</p> <p>0.2. Meetings with FIG MLAs will be scheduled for Year 3, but exact timings dependent on availability (especially given the current COVID-19 situation).</p> <p>0.3. Technical Report (TR) to be produced and delivered by project completion (31 March 2021). TR to be disseminated at FIG EC following completion.</p> <p>0.4. IMS-GIS metadata submitted at project completion (31 March 2021).</p> <p>0.5. The KBA application will be finalised and submitted to the KBA committee during Year 3. This will include a stakeholder consultation, during which decision-makers will be provided</p>

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
			with information and asked to support the KBA application.
<p>Output 1</p> <p>Awareness of the project is raised within the local and international communities.</p>	<p>1.1 Relevant stakeholders (marine users, and adjacent landowners of Berkeley Sound and Falklands Sound) are made aware of the whale project at the start (2018), during (2019 and 2020), and following project completion (2021).</p> <p>1.2 Project information included in Falklands Conservation media, including 3 articles in FC magazine (one each by December 2018, 2019 and 2020) and 2 in the FC Newsletter (one each by July 2019 and January 2021).</p> <p>1.3 By March 2019 establish a project social media page to disseminate information, with the aim of acquiring 1,000 local and international followers by project completion. Publish bi-weekly facebook updates to the page during the field seasons (February to August), and monthly updates outside of the field season.</p> <p>1.4 Reach over 2,000 people in the Falkland Islands community via: (1) publication of three Penguin News articles – 2 by Dec 2019, and 1 by Dec</p>	<p>1.1 Progressing on schedule. In Year 2, stakeholder updates were disseminated at the end of the 2019 field season (in September 2019) and at the start of the 2020 field season (in January 2020) to ensure that stakeholders were up to date with project progress (evidenced in Annex 4). A specific meeting was held in March 2020 with the SAERI project manager for the Darwin+ Marine Management Areas project, to discuss the KBA and the MMA plans for the Falklands.</p> <p>1.2 Progressing on schedule. In Year 2 we published two project articles in the FC magazine. Comprising a main feature in May 2019 and a brief summary in November 2019 (both evidenced in Annex 4). We also included an article in the FC newsletter in July 2019 (additional to stated Indicators; evidenced in Annex 4).</p> <p>1.3 Progressing on schedule. The project social media page was established in Year 1 and posts can be viewed at: https://www.facebook.com/FalklandsWhale Posts have been weekly or bi-weekly during the field season, and some examples are evidenced in Annex 4. As of the 31 March 2020, the page had 1,562 followers and many active engagements.</p> <p>1.4 Progressing on schedule. In Year 2 the time-bound indicators included a Penguin News article by Dec 2019, and a community school visit. Both were delivered. Penguin News articles were published on 19 July 2019 about the community training day, and on 25 October 2019 providing a roundup of the 2019 field season. Copies of both articles are evidenced in Annex 4. Almost everyone on the Islands reads the Penguin News, and so it can be assumed that at least 2,000 people would have seen those articles. Additionally, FC's Conservation Manager and the Project Officer visited the Infant Junior School in Stanley on 4 February 2020, and provided a talk on whales to approximately 35 children as well as showing them some baleen and whale prey items. Some photographs and a copy of the school newsletter are evidenced in Annex 4.</p> <p>1.5 Scheduled for Year 3. However, the PO attended the World Marine Mammal Conference in Barcelona during December 2019, and presented a scientific paper on sei</p>	

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
	<p>2020; (2) an interview with Falklands Islands Radio Service – during 2019; (3) a community public talk aimed at 50 people – during 2019; (4) a school visit aimed at 30 children – during 2020; and (5) a TV feature by March 2021 published on local television channels and to the international community via the internet.</p> <p>1.5 Raise awareness of Falklands sei whales amongst the international scientific community by submitting 2 papers to peer reviewed online journals by 31 March 2021.</p> <p>1.6 By 31 Jan 2020 and 31 Jan 2021, submit a selection of each season's sei whale photo-identification data to HappyWhale.com to increase local and international access and awareness.</p> <p>1.7 By 31 March 2021, a final Technical Report is produced, and subsequently made available for download.</p>	<p>whales in the Falkland Islands which was very well-received by the international scientific community (evidenced in Annex 4).</p> <p>1.6 Progressing on schedule. A selection of 30 of the most distinctive sei whales that were photographed in Berkeley Sound during the 2019 field season were uploaded to HappyWhale.com during December 2019. A full search of the animals can be carried out at: https://happywhale.com Some example screengrabs are evidenced in Annex 4.</p> <p>1.7 Scheduled for Year 3.</p>	
<p>Activity 1.1. The Project Officer (PO) will liaise with the FC Communications and Marketing Officer (CMO) regarding the content and timing of FC and local media outputs to maximise opportunities for raising awareness of the project.</p>		<p>The PO and CMO have maintained good communications regarding potential media outlets. Media outputs are all progressing on schedule, with multiple examples provided in Annex 4.</p>	<p>During Year 3, articles will be produced for the FC magazine (scheduled for May and November 2020) and newsletter (scheduled for January 2021), and for the Penguin News (scheduled for October 2020). Additionally, the PO and CMO are actively working together to produce</p>

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
			a TV documentary which is scheduled for completion by the end of the project.
Activity 1.2. Lists of stakeholders and steering group members will be compiled to whom project updates should be disseminated, and communications maintained with the school and radio station to determine the best opportunities for visits.		An email list of steering group and stakeholders is maintained by the PO. It is not evidenced here due to privacy, but is available on request. Project updates have been disseminated bi-annually, as evidenced in Annex 4. The school visit was completed in Year 2 (see Annex 4), and a radio interview was provided in Year 1.	While stated outputs have been achieved, contact will be maintained with the CMO with regard to additional opportunities for disseminating information to the community. In year 3, at least two further steering group meetings and stakeholder updates are scheduled for September 2019 and Feb/Mar 2021.
Activity 1.3. A specific project social media page will be established at the beginning of the project, and regular updates provided to promote the project.		The page was established in Year 1, and regular updates have been posted (see Annex 4). The Darwin Initiative is frequently linked and also share these posts to their own page.	Social media updates will continue throughout Year 3 until completion of the project.
Activity 1.4. Liaise with Ted Cheeseman and the portal HappyWhale.com to ensure that sei whale images are uploaded annually and associated news updates disseminated via social media and other outlets such as IAATO newsletters.		The PO met with Ted Cheeseman both at the Barcelona conference (Dec 2019) and in Stanley (January 2020), and has maintained email contact. Images were uploaded to HappyWhale.com in December 2019 (see Annex 4). The PO and Ted also collaborated to produce a short article in the IAATO newsletter in January 2020, to request additional sei whale images from tour companies (evidenced in Annex 4).	Communications will be maintained with HappyWhale. An additional selection of images of distinctive sei whales will be submitted to HappyWhale by the end of 2020.
Activity 1.5. Liaise with project partners regarding the planning and production of potential scientific submissions to journals.		N/A – scheduled for production/completion during Year 3.	Papers are currently being drafted on the habitat modelling, tagging and acoustic components of the project. It

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
			is expected that some of these will be submitted during Year 3.
Activity 1.6. Produce a Technical Report together with relevant project partners and upload to an online server from which it will be downloadable open access to the public. Final Technical Report should include species distribution maps, discussion of foraging ecology, genetic analysis, and photo-identification. Report disseminated to decision-makers and stakeholders.		N/A – scheduled for production/completion during Year 3.	The Technical Report is scheduled for delivery in Year 3, and most of the latter six months of this period will be spent in data analysis and producing the report.
Output 2 Knowledge of, and capacity for, cetacean research is increased within the community.	2.1 The FC volunteer database will be expanded to include new volunteers interested in whale research (aiming for 20 in 2019, and 20 in 2020). 2.2 On-boat field experience will be gained by 15 volunteers across the project duration (2019 and 2020), with their increase in understanding demonstrated via a volunteer-led magazine article. 2.3 A cetacean field skills training event will be held during June/July 2019, aimed at 10 community volunteers. Success will be measured by the participants ongoing submission of data forms by project completion. 2.4 There will be an interim inventory of field equipment at the end of 2019, with a final equipment catalogue produced at the end of the 2020 field season, informing the capacity for	2.1 Progressing on schedule. During Year 2, articles were published on the main FC Facebook site and the Whale Project Facebook site to advertise volunteer roles (evidenced in Annex 5). All registered volunteers on the FC database were also sent the information as an email via Mailchimp (evidenced in Annex 5). Additionally, the Project Officer contacted via email all of the volunteers who had signed up during Year 1 of the project to ascertain whether they were still available and interested in volunteering during Year 2. A total of 56 people responded, and 25 confirmed their interest after receiving additional information and were signed up as FC volunteers. Due to limitations regarding privacy this point is not evidenced here, but some information may be available on request. Volunteer opportunities were also advertised to stakeholders via the bi-annual project updates. 2.2 Progressing on schedule. Nine community volunteers (non-FC staff) have acquired boat-based field experience during whale surveys with the Project Officer during Year 2 (evidenced in Annex 5), bringing the total for the project so far to 17 people. It is expected that more opportunities will be available during Year 3, but these are currently on hold due to COVID-19. A FC magazine article was published in May 2019 (evidenced in Annex 4), featuring text written by two of the community volunteers that assisted with the boat surveys and describing their experiences during the surveys. 2.3 A field skills training course was held on 6 July 2019, and attended by 20 community volunteers. The course comprised a classroom session including instruction on how to complete the data forms and how to identify the cetacean species in the Falklands, followed by a field visit to Cape Pembroke where some practice watches were carried out. Photographs and example copies of the training material are provided in Annex 5. A web page was also established to support the project, from which training materials can be	

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
	<p>future cetacean survey work in the Islands.</p> <p>2.5 Training of two FC staff in deployment and recovery of suction-cup time-depth-recorder (TDR) tags during March 2019.</p>	<p>downloaded (https://www.falklandsconservation.com/citizen-science-whales) Additionally, a Penguin News article describing the event was published on 19 July 2019 and has been evidenced in Annex 4.</p> <p>2.4 An interim equipment inventory was carried out at the end of the 2019 field season in August 2019 and is evidenced in Annex 5.</p> <p>2.5 Completed during Year 1 (March 2019).</p>	
<p>Activity 2.1. The PO and other FC staff will advertise whale volunteer opportunities in local media, and will vet applicants to ensure that they know what to expect, are physically fit and will cope with a long and physical day at sea. Ensure volunteer forms are completed for insurance purposes.</p>		<p>Four community volunteers accompanied the PO on boat surveys between April and August 2019, following volunteer advertisement in January 2019. Opportunities for the 2020 field season were advertised in January 2020, and six volunteers accompanied the PO on boat surveys during February 2020. After emailing their interest, volunteers were sent a document containing more information about the surveys with emphasis on the long day and adverse weather that is sometimes encountered (see Annex 5). Volunteers were asked to report if they had any medical issues that might affect their ability to cope with the day at sea. All volunteers were asked to complete FC forms for insurance.</p>	<p>The PO will continue to vet any additional volunteers who sign up during the remainder of the 2020 field season.</p>
<p>Activity 2.2. Risk assessments will be produced to ensure the well-being of volunteer participants on the project boat surveys.</p>		<p>Risk assessments have been produced to cover volunteers and FC staff both during small boat surveys and the acoustic deployments. The first pages of these are evidenced in Annex 5, and full copies are available on request.</p>	<p>N/A – These have been completed, although they will remain applicable during the Year 3 field season and may be updated as deemed necessary.</p>
<p>Activity 2.3. The PO will coordinate with the volunteers around short notice weather windows to try and ensure equal opportunities for people to attend boat surveys. Basic instruction will be provided to</p>		<p>Instruction was provided to volunteers on the boat, and depending on whether whales were encountered and the nature of those encounters. All volunteers had an attempt with the photo-</p>	<p>Volunteer assistance with fieldwork will continue for the remainder of the 2020 field season, assuming that the COVID-19 situation is resolved and it</p>

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
the volunteers on field techniques, including photo-identification and faecal sampling (as opportunities arise).		identification camera (evidenced in Annex 5) and with general spotting and tracking of the whales. Some also assisted with faecal sampling when that opportunity arose. Examples of how the volunteers helped and what they learnt are evidenced in the FC magazine article provided in Annex 4, which was written by two volunteers.	becomes possible to resume the boat surveys and to take volunteers on them.
Activity 2.4. Training material, data forms and a data guidance protocol will be produced, and a full volunteer training day comprising a classroom session and fieldtrip will be planned, advertised and implemented.		This Activity was completed in July 2019, with the provision of a full training day for 20 people and the development of training material (see Annex 5 and reported progress in response to Indicator 2.3 above).	N/A. This Activity was completed in Year 2.
Activity 2.5. Full inventories of field equipment will be conducted at the end of each field season, and new equipment ordered as needed so that capacity is maintained.		An interim inventory was completed in August 2019, on completion of the 2019 field season (see Annex 5).	A full inventory of equipment will be produced on completion of the 2020 field season, in September 2020.
Output 3 Berkeley Sound and Falkland Sound are assessed for their suitability as whale Key Biodiversity Areas (KBAs).	3.1 Address current data gaps in Berkeley Sound and Falkland Sound through the collection of boat-based survey data on whale occurrence in Jan–Aug 2019 and 2020. 3.2 By 31 March 2021, cetacean sighting data will be analysed to produce distribution maps and habitat assessments. 3.3 By 31 March 2021, photo-identification catalogues of distinct individuals will be produced for both sites and re-sightings examined. 3.4 By July 2020, whale occurrence data will be assessed against KBA	3.1 Progressing on schedule, with the exception of the reduced survey coverage achieved in Falkland Sound (see Section 9 of AR2). In relation to the Year 2 reporting period, the project has completed: 5 surveys in Apr 2019, 5 surveys in May 2019, 8 surveys in Jun 2019, 5 surveys in Jul 2019, 3 surveys in Aug 2019, 1 survey in Jan 2020 (plus an opportunistic yacht survey), 4 surveys in Feb 2020 and 6 surveys in Mar 2020 (then curtailed at the end of the month due to COVID-19). Examples of invoices to evidence the boat surveys are provided in Annex 6. 3.2 Scheduled for production/completion during Year 3. However, some data preparation and initial habitat modelling has commenced during Year 2 (see Annex 6 for an example), and it is expected that a paper on habitat suitability will be ready for submission early in Year 3 and available for inclusion in the KBA assessment. 3.3 Scheduled for production/completion during Year 3. Initial cataloguing of the sei whale images from the 2019 field season was completed in December 2019 (evidenced in Annex 6), and the process of checking them against earlier catalogues for the Falklands (2017 and 2018) is underway). The sei whale catalogue for 2020 will be completed at the end of the	

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
	<p>criteria to determine potential KBA status.</p>	<p>field season. Southern right whale catalogues for both years will be produced in the last period of 2020. Completed catalogues are not due until project completion.</p> <p>3.4 Scheduled for production/completion during Year 3. However, a draft Technical Report was produced in Feb/Mar 2020 which contained supporting information on how the sei whale occurrence in the Falklands has been assessed against global KBA criteria (evidenced in Annex 6). This report will be fundamental to the KBA application. It has already received feedback from the KBA Committee, and it should be finalised early in Year 3.</p>	
<p>Activity 3.1. A series of small boat surveys will be planned and executed in the two focal sites by the PO, coordinated around weather, and logistical constraints including boat availability (with project partner SMSG). Appropriate field methods will be developed to address the aims of the project.</p>		<p>Texts and phone calls between the PO and SMSG have been almost daily during the field seasons, to coordinate field work around weather. Boat surveys have been carried out whenever possible (evidenced by invoices in Annex 6). Limitations to the relative coverage acquired at the two sites are discussed fully in Section 9 of AR2. Field methods followed successful survey work in 2017 (outlined in Weir, C.R. 2017. Developing a site-based conservation approach for sei whales <i>Balaenoptera borealis</i> at Berkeley Sound, Falkland Islands. Falklands Conservation report. Version 1.0, September 2017. 115 pp.).</p>	<p>Fieldwork at the start of Year 3 is on hold due to COVID-19 (evidenced in Annex 6). It will resume as soon as the restrictions on boat availability and personnel movements are lifted. The boat surveys were planned to continue until the end of August 2020, in order to complete the sei whale season and then also collect data during the southern right whale season (June to August).</p>
<p>3.2. Data from field surveys will be entered into systematic and purpose-developed databases and maintained weekly during the field season. Development of species-specific photo-identification catalogues, and establishment of associated databases. Data analysis including QGIS mapping, recaptures of individuals, and habitat modelling to be conducted to support the KBA process.</p>		<p>All field data have been entered into separate spreadsheets for effort and sightings (evidenced in Annex 6), usually within 48 hr of each survey. Databases have also been completed for faecal and biopsy samples (evidenced in Annex 6). The 2019 photo-identification catalogue for sei whales has been produced and is being cross-checked (see Annex 6). Some QGIS mapping and habitat modelling of the 2019 dataset has been carried out</p>	<p>Field data collection will resume post COVID-19, and data will continue to be entered into the spreadsheets. By project completion the photo-ID catalogues for sei whales and southern right whales will be developed. Habitat modelling will be completed and used to support the KBA application. QGIS will be used to produce maps of species</p>

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
		(see conference poster in Annex 4 and habitat analysis examples in Annex 6).	distribution and effort for the final project Technical Report.
3.3. Available data sources on whales within the Falklands (those from the Darwin project, and others where available) will be compiled and assessed in support of a KBA application. A KBA application Technical Report will be produced to describe available data against KBA criteria, and circulated to decision-makers, stakeholders and the IUCN KBA partnership.		A draft Technical Report was produced in Feb/Mar 2020 which contained supporting information on how the sei whale occurrence in the Falklands has been assessed against global KBA criteria (evidenced in Annex 6). This report will be fundamental to the KBA application. It has already received feedback from the KBA Committee, and it should be finalised early in Year 3.	Finalise the draft of the KBA Technical Report, hold the stakeholder consultation. Submit the final KBA application to the IUCN KBA partnership.
3.4. Communications will be established and maintained with relevant international KBA personnel, to guide the process and ensure any application is optimal.		The PO met with Charlotte Boyd (Chair, KBA Standard and Appeals Committee) at the World Marine Mammal Conference in Barcelona during December 2019 to initiate discussions, and this was followed up by email correspondence (copies available on request). The PO and the FC Marine Conservation Officer (MCO) also Skyped with David Díaz (KBA co-Regional Focal Point for Latin America and Caribbean) in February 2020, and continued email correspondence during March 2020. David has commented on the draft KBA application documents, and is guiding the process. Evidence of these communications is available on request but not included here due to privacy.	Communications with KBA personnel will be maintained until the KBA application has been submitted and assessed.
Output 4 Establishment of a passive acoustic monitoring (PAM) study of baleen whales to assess temporal presence	4.1 "Sound Trap" passive acoustic monitoring devices deployed at Berkeley Sound and Falkland Sound for two full years from December 2018 to collect baseline data on whale temporal occurrence.	4.1 Progressing on schedule. During Year 2 we completed the following: (1) recovery of the three Berkeley Sound devices on 23 April and 27 May 2019; (2) deployment of the three Berkeley Sound devices on 27 May and 1 June 2019; (3) recovery of the three Berkeley Sound devices on 30 September 2019; (4) deployment of the three Berkeley Sound devices on 16 October 2019; (5) recovery of the three Berkeley Sound devices on 21 March 2020; (6) deployment of the three Berkeley Sound devices on 26 March 2020 (currently deployed). A 5-week data gap was incurred for two of the Berkeley Sound devices during	

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
and the validity of long-term monitoring using PAM.	<p>4.2 Acoustic data analysis carried out to assess the temporal variation of sei whales at the two sites by 31 March 2021.</p> <p>4.3 An assessment of the applicability of PAM for the long-term monitoring of baleen whales in the Falklands will be conducted by project completion.</p>	<p>April/May 2019 due to the loss of the transponding hydrophone (see Section 9). Additionally, we deployed an acoustic device in Falkland Sound on 22 October 2019. Evidence for the acoustic deployments as photographs and screengrabs of the acoustic data is provided in Annex 7.</p> <p>4.2 Progressing on schedule. Two batches of acoustic data have been shipped to Sal Cerchio, and the latest batch will be shipped as soon as COVID-19 allows. The analysis of the dataset is due at project completion, but an initial analysis was conducted by Sal and an interim report delivered to FC in March 2020 (evidenced in Annex 7). The initial results are very promising and suggest that the acoustic component of the project will be delivered on schedule.</p> <p>4.3 Scheduled for production/completion during Year 3.</p>	
Activity 4.1. FC and the acoustic project partner Sal Cerchio will coordinate to ascertain the equipment, methods, sites, and deployment plan that will optimise the acoustic component of the project. Ongoing communications will be maintained over the project lifetime as the acoustic work evolves.		<p>Communications between FC and Sal have been extensive throughout the project. A full year of water temperature has now been acquired from the acoustic releases (ARs) and a graph is presented in Annex 7. The temperature data informs battery life and was used in February 2020 to calculate the endurance of the ST500s for the remaining deployments. An updated deployment plan for the remainder of the project was discussed in February, and a new timeline presented in the Steering Group update (evidenced in Annex 7).</p>	<p>Acoustic deployments will continue during Year 3 until the end of the project, according to the updated schedule presented in Annex 3. Communications will be ongoing, since the plan has to be revised continually around weather and other constraints. For example, the recovery of the Falkland Sound device is already delayed due to the fieldwork lockdown from COVID-19.</p>
Activity 4.2. The PO and other FC staff will liaise with SMSG to organise boat charters during suitable weather windows to recover and re-deploy the acoustic devices at changeovers. Suitable risk assessment for acoustic deployment work developed.		<p>Communications have been ongoing regarding boat charter for acoustic work (evidenced by successful deployments/recoveries and a copy of an invoice in Annex 7). A risk assessment for acoustic work was developed and is included in Annex 5.</p>	<p>Communications will continue until completion of the acoustic deployments which is scheduled for December 2019 (see schedule in Annex 7).</p>
Activity 4.3. A method of transferring sound files to Sal Cerchio for analysis will be identified.		<p>Sound files were posted to Sal after each of the first two deployments on portable hard drives. This is evidenced by Sal's production of the interim</p>	<p>Batches of data from the additional deployments will also be shipped to Sal on portable hard drives during</p>

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
		analysis report (Annex 7) which is based on those data.	Year 3 until completion of the acoustic component of the project.
Activity 4.4. Sal Cerchio will conduct an assessment of the suitability of automated classification detectors to identify the calls of baleen whales, especially sei whales, within the sound files.		This activity is scheduled for production/completion during Year 3. However, initial analysis was conducted by Sal and an interim report delivered to FC in March 2020 (evidenced in Annex 7). The testing of automated classification detectors was started in Year 2 and the results are outlined in the report.	This activity will be conducted during Year 3 and completed by the end of the project.
Activity 4.5. Acoustic results and interpretation (including conservation/management implications) will be reported to FC for inclusion in the project Technical Report.		N/A – scheduled for production/completion during Year 3.	This activity will be conducted during Year 3 and completed by the end of the project.
<p>Output 5</p> <p>An assessment of the foraging ecology, trophic role and diet of sei whales in the Falklands.</p>	<p>5.1 Deployment of short-term suction-cup time-depth-recorder (TDR) tags on whales in March 2019 to monitor foraging behaviour.</p> <p>5.2 Collection of a combined total of 50 whale faecal samples over both seasons (2019 and 2020).</p> <p>5.3 Between August 2020 and February 2021, DNA-based identification of whale diet using PCR-amplification and Illumina sequencing, followed by identification of prey using DNA databases.</p> <p>5.4 Between August 2020 and February 2021, stable isotope analysis of tissue samples conducted to investigate trophic level.</p>	<p>5.1 Completed during Year 1 (March 2019).</p> <p>5.2 In Year 2 of the project, a total of 7 faecal samples were collected from sei whales during April and May 2019, and an additional 12 were collected in February and March 2020 (evidenced in Annex 8). Every faecal event that was observed from the RIB during Year 2 was collected; one additional faecal event was seen from the yacht in January 2020 but could not be collected due to the constraints of that platform. In total, 34 faecal samples have been collected from sei whales over the course of the project until the end of March 2020. No faecal events at all have been observed from southern right whales.</p> <p>5.3 to 5.5 Scheduled to be completed during Year 3.</p>	

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
	5.5 By project completion, whale foraging behaviour in the Falkland Islands described.		
Activity 5.1. Appropriate permits acquired from Falkland Islands Government for the tagging work.		The permit was acquired in July 2018, i.e. in Year 1 (evidenced in Annex 8), in order to be certain that this component of the project could go ahead.	N/A. This Activity was completed in Year 1.
Activity 5.2. FC and project partner Ari Friedlaender will coordinate to ensure that suitably experienced tagging personnel and equipment are available in the Falkland Islands for the tagging component.		Described in AR1 relating to Year 1, as the tagging was completed in March 2019.	A report on the tagging component will be submitted to FC by Ari Friedlaender's team for inclusion in the final Darwin report.
Activity 5.3. PO will ensure that suitable sterilised faecal sampling equipment is available on small boat surveys, and will oversee and coordinate efforts to collect faecal material when opportunities arise. Processing and storage of faecal samples at a suitable facility in the Falkland Islands.		See response to Output 2 outlined above. All but one of the observed faecal samples during surveys in year 2 were collected, processed and stored in a freezer at FC (evidenced in Annex 8).	Faecal sampling will continue for the remainder of the 2020 field season, with sterilisation protocols being followed and sample storage adhering to the developed guidance (evidenced in Annex 8).
Activity 5.4. Appropriate permits (FIG export permits) will be acquired to ship samples to BAS. Coordination between the PO and BAS personnel to arrange the transfer and shipment of samples.		The PO has coordinated via email with Mike Dunn at BAS since December 2019 with regard to dates for shipping samples northwards to the UK on the BAS vessel. The BAS vessel is scheduled to call in to Stanley to load samples on approximately 22 May 2020. Since the export of faecal samples requires only a simple FIG export permit rather than CITES permits (which take much longer to acquire), everything on schedule.	FIG export permits to ship the faecal samples will be obtained from Customs in April or early May 2020 (Year 3), to allow for the samples to travel on the BAS vessel in late May 2020.
Activity 5.5. Analyses of prey species identification and tissue stable isotope analysis conducted by BAS, with results and interpretation (including conservation/management implications) reported to FC for inclusion in the project Technical Report.		N/A – scheduled for production/completion during Year 3. However, a MoU was signed between BAS and FC during Year 2 relating to tissue analysis for the genetic and isotope components (evidenced in Annex 8).	This activity will be conducted during Year 3 and completed by the end of the project.

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
<p>Output 6</p> <p>Clarify the population identity, structure and genetic diversity of Falkland whales.</p>	<p>6.1 Genetic material acquired from live whales (aim of 50 samples per species) and stranded animals in the Falklands during 2019 and 2020.</p> <p>6.2 Between August 2020 and February 2021, DNA extraction of samples, and laboratory analyses to identify the sex, mitochondrial DNA diversity and individual identity using microsatellite loci.</p> <p>6.3 Following project completion (and/or complete analysis of samples, whichever is first) genetic data available open access via a platform such as Genbank (DNA sequence data) or Datadryad (microsatellite genotype data).</p>	<p>6.1 During Year 2, we acquired: (1) four biopsy samples from live sei whales; (2) 49 biopsy samples from live southern right whales; (3) tissue samples from dead stranded animals comprising three sei whales, and one Antarctic minke whale. Evidence of the biopsy sampling and the sampling of dead animals is provided in Annex 9.</p> <p>6.2 to 6.3 Scheduled to be completed during Year 3.</p>	
<p>Activity 6.1. Permit acquired from Falkland Islands Government to sample dead whales and to conduct the biopsy sampling work; the latter requiring development of suitable protocols.</p>		<p>The permit was acquired in July 2018, i.e. in Year 1 (evidenced in Annex 8), in order to be certain that this component of the project could go ahead. Falklands Conservation has a general ongoing permit from FIG to allow the sampling of dead cetaceans (evidenced in Annex 9).</p>	<p>N/A. This Activity was completed in Year 1.</p>
<p>Activity 6.2. Small boat surveys conducted at two focal sites to collect genetic material via live biopsy sampling using a crossbow. PO to conduct continuous routine maintenance to biopsy equipment throughout the field seasons to ensure a high level of sterilisation.</p>		<p>Small boat surveys were evidenced in Annex 3, and biopsy sampling of sei and southern right whales is described in Output 6.1 and evidenced in Annex 9. Biopsy equipment has been maintained and sterilised by the PO throughout the 2019 and 2020 field seasons, including filing the edges of the tips to keep them sharp (evidenced in Annex 9).</p>	<p>Small boat surveys are scheduled to continue in Year 3 between April and August 2020 (however, this is dependent on the emerging COVID-19 situation). Biopsying effort will continue throughout the fieldwork.</p>

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
Activity 6.3. Processing and storage of tissue samples at a suitable facility in the Falkland Islands.		Samples are always processed by the PO on the same date that they are collected, since they need to be immediately frozen to preserve DNA. A freezer is located in the Falklands Conservation offices and used to store samples in a range of cryovial boxes (evidenced in Annex 9).	Processing and storage of samples will continue until the end of the field season in Year 3.
Activity 6.4. CITES export and import permits acquired through liaison with Mike Dunn (BAS) and FIG Customs, to ensure whale samples can be shipped to BAS for analysis. Communications maintained with BAS regarding shipment opportunities to the UK on their vessels, and subsequent transfer of samples undertaken.		The PO has coordinated with Mike Dunn at BAS since December 2019 with regard to shipping samples northwards to the UK on the BAS vessel. A working deadline of 10 April 2019 was agreed for sending to BAS the list of samples for which CITES permits were required, since there is an approx. 6 week lead-in time for acquiring the permits and the BAS vessel is scheduled to call in to Stanley to load samples on ~22 May 2020. During the last week of March, Mike emailed the PO to request that we start the permit applications a little earlier if possible, due to the emerging situation with COVID-19. A list of CITES samples was therefore sent to Mike on 30 March 2020 to initiate the CITES Falklands export permit process (evidenced in Annex 9).	Complete the acquisition of the CITES permits for shipping whale tissue samples during April/May 2020. Complete BAS BioBOLs, pack samples, have them checked with Customs and coordinate with BAS to have them delivered to the BAS vessel during its port call in May 2020. Discuss and determine a plan for samples collected after the 10 April 2020 CITES permit deadline, with regard to if those can be shipped to the UK and analysed within the project timeframe.
Activity 6.5. Genetic analyses conducted by BAS, with results and interpretation (including conservation/management implications) reported to FC for inclusion in the project Technical Report.		N/A – scheduled for production/completion during Year 3. However, a MoU was signed between BAS and FC during Year 2 relating to tissue analysis for the genetic and isotope components (evidenced in Annex 8).	This activity will be conducted during Year 3 and completed by the end of the project.

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

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
Impact:			
Baleen whale populations and their key habitats in the Falkland Islands are sustained over future decades via evidence-based management decisions.			
Outcome: Decision-makers, including community representatives, have up-to-date, robust data allowing them to make better informed, evidence-based decisions to support the establishment of Key Biodiversity Areas and management of the wider marine environment in the Falkland Islands.	0.1 Project Steering Group established with update meetings held twice per year, to guide the project and ensure resulting data are robust. 0.2 Bi-annual meetings held with FIG Heads of-Department, Members of Legislative Assembly. 0.3 By 31 March 2021, a Technical Report is delivered, and subsequently provided to the FIG Environmental Committee during 2021. 0.4 By the end of May 2021, the final project data are stored on the FC server and metadata are submitted to the IMS-GIS data centre. 0.5 By project completion, decision-makers will understand and provide support for at least one KBA application for whales in the Falkland Islands.	0.1 and 0.2 Copies of meeting minutes. 0.3 Copy of Project Technical Report. Copy of a FIG Environmental Committee meeting agenda including the Report. 0.4 File listing on FC server and metadata catalogue entries on IMS-GIS centre website. 0.5 Copy of a letter of support from key decision-maker.	0.1 and 0.2. Steering group members and decision makers have an interest and availability to attend bi-annual meetings. 0.3 Decision makers and community representatives will utilise data provided to make evidence-based decisions.
Output 1 Awareness of the project is raised within the local and international communities.	1.1 Relevant stakeholders (marine users, and adjacent landowners of Berkeley Sound and Falklands Sound) are made aware of the whale project at the start (2018), during (2019 and 2020), and following project completion (2021). 1.2 Project information included in Falklands Conservation media, including 3 articles in FC magazine (one each by	1.1 Electronic copies of the stakeholder updates disseminated over the project duration. 1.2 Copies of magazine and newsletter articles. 1.3 URL for site and number of followers.	1.5 Submission of peer reviewed papers depends on field results and timeframe for analysis.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	<p>December 2018, 2019 and 2020) and 2 in the FC Newsletter (one each by July 2019 and January 2021).</p> <p>1.3 By March 2019 establish a project social media page to disseminate information, with the aim of acquiring 1,000 local and international followers by project completion. Publish bi-weekly facebook updates to the page during the field seasons (February to August), and monthly updates outside of the field season.</p> <p>1.4 Reach over 2,000 people in the Falkland Islands community via: (1) publication of three Penguin News articles – 2 by Dec 2019, and 1 by Dec 2020; (2) an interview with Falklands Islands Radio Service – during 2019; (3) a community public talk aimed at 50 people – during 2019; (4) a school visit aimed at 30 children – during 2020; and (5) a TV feature by March 2021 published on local television channels and to the international community via the internet.</p> <p>1.5 Raise awareness of Falklands sei whales amongst the international scientific community by submitting 2 papers to peer reviewed online journals by 31 March 2021.</p> <p>1.6 By 31 Jan 2020 and 31 Jan 2021, submit a selection of each season's sei whale photo-identification data to HappyWhale.com to increase local and international access and awareness.</p> <p>1.7 By 31 March 2021, a final Technical Report is produced, and subsequently made available for download.</p>	<p>1.4 Copies of articles and links to media outputs, photos of presentations at public talk and school visit.</p> <p>1.5 URLs for publishers sites.</p> <p>1.6. URL to sei whale images on HappyWhale.</p> <p>1.7 Copy of final Technical Report (open access).</p>	
<p>Output 2 Knowledge of, and capacity for, cetacean research is</p>	<p>2.1 The FC volunteer database will be expanded to include new volunteers interested in whale research (aiming for 20 in 2019, and 20 in 2020).</p>	<p>2.1 Database file stored at FC.</p>	<p>2.1 to 2.3. Volunteers will have availability and desire to attend</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
increased within the community.	<p>2.2 On-boat field experience will be gained by 15 volunteers across the project duration (2019 and 2020), with their increase in understanding demonstrated via a volunteer-led magazine article.</p> <p>2.3 A cetacean field skills training event will be held during June/July 2019, aimed at 10 community volunteers. Success will be measured by the participants ongoing submission of data forms by project completion.</p> <p>2.4 There will be an interim inventory of field equipment at the end of 2019, with a final equipment catalogue produced at the end of the 2020 field season, informing the capacity for future cetacean survey work in the Islands.</p> <p>2.5 Training of two FC staff in deployment and recovery of suction-cup time-depth-recorder (TDR) tags during March 2019.</p>	<p>2.2 Copies of participation photos and record of attendance. Copy of volunteer-led magazine article.</p> <p>2.3 Copies of training material, attendees list and photos.</p> <p>2.4 Copy of final equipment catalogue at project completion.</p> <p>2.5 Receipts from field visit by tagging expert and documentation of training.</p>	fieldwork sessions and outreach activities.
<p>Output 3</p> <p>Berkeley Sound and Falkland Sound are assessed for their suitability as whale Key Biodiversity Areas (KBAs).</p>	<p>3.1 Address current data gaps in Berkeley Sound and Falkland Sound through the collection of boat-based survey data on whale occurrence in Jan–Aug 2019 and 2020.</p> <p>3.2 By 31 March 2021, cetacean sighting data will be analysed to produce distribution maps and habitat assessments.</p> <p>3.3 By 31 March 2021, photo-identification catalogues of distinct individuals will be produced for both sites and re-sightings examined.</p> <p>3.4 By July 2020, whale occurrence data will be assessed against KBA criteria to determine potential KBA status.</p>	<p>3.1 and 3.2 A copy of the final project Technical Report (open access) documenting the methods, data analysis and results.</p> <p>3.3 Electronic copies of photo-identification catalogues. Images available at online portal HappyWhale. Re-sighting analysis included in final Technical Report.</p> <p>3.4 A copy of the KBA Technical Report containing an assessment of Falkland sei whales against the KBA criteria, as submitted in support of the KBA application.</p>	<p>3.1 to 3.3 Weather, availability and logistics will not interrupt boat-based survey work.</p> <p>3.1 to 3.3 Whales are present in the sites during the fieldwork periods.</p> <p>3.4 KBA criteria will remain constant throughout the project lifetime, and the process will not be hindered by the lack of global population data.</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Output 4</p> <p>Establishment of a passive acoustic monitoring (PAM) study of baleen whales to assess temporal presence and the validity of long-term monitoring using PAM.</p>	<p>4.1 "Sound Trap" passive acoustic monitoring devices deployed at Berkeley Sound and Falkland Sound for two full years from December 2018 to collect baseline data on whale temporal occurrence.</p> <p>4.2 Acoustic data analysis carried out to assess the temporal variation of sei whales at the two sites by 31 March 2021.</p> <p>4.3 An assessment of the applicability of PAM for the long-term monitoring of baleen whales in the Falklands will be conducted by project completion.</p>	<p>4.1 Copies of datasets will be stored on the FC server and metadata submitted to the IMS-GIS centre.</p> <p>4.2 and 4.3 Analysis results and PAM feasibility study will be presented in the project Technical Report.</p>	<p>4.1 Static acoustic devices will remain in situ, be recoverable, and will collect high quality data.</p> <p>4.2 Acoustic analysis will be completed on schedule.</p>
<p>Output 5</p> <p>An assessment of the foraging ecology, trophic role and diet of sei whales in the Falklands.</p>	<p>5.1 Deployment of short-term suction-cup time-depth-recorder (TDR) tags on whales in March 2019 to monitor foraging behaviour.</p> <p>5.2 Collection of a combined total of 50 whale faecal samples over both seasons (2019 and 2020).</p> <p>5.3 Between August 2020 and February 2021, DNA-based identification of whale diet using PCR-amplification and Illumina sequencing, followed by identification of prey using DNA databases.</p> <p>5.4 Between August 2020 and February 2021, stable isotope analysis of tissue samples conducted to investigate trophic level.</p> <p>5.5 By project completion, whale foraging behaviour in the Falkland Islands described.</p>	<p>5.1 Receipts from tagging fieldwork, and photographs of tagging efforts.</p> <p>5.2 Images of faecal sampling in progress; copies of FIG export permits for the samples.</p> <p>5.3 and 5.4 Receipts from BAS of analysis costs; results presented in the final Technical Report.</p> <p>5.5 Copy of final Technical Report.</p>	<p>5.1 Sei whales can be approached sufficiently closely to deploy TDRs (pilot study).</p> <p>5.2 The target of 50 faecal samples is achievable within the project timeframe.</p> <p>5.3 and 5.4 Samples are exported to BAS in adequate time for analysis.</p>
<p>Output 6</p> <p>Clarify the population identity, structure and genetic diversity of Falkland whales.</p>	<p>6.1 Genetic material acquired from live whales (aim of 50 samples per species) and stranded animals in the Falklands during 2019 and 2020.</p> <p>6.2 Between August 2020 and February 2021, DNA extraction of samples, and laboratory analyses to identify</p>	<p>6.1 Physical presence of stored samples. Documentation of biopsy attempts (photos and video). Copies of CITES export permits.</p>	<p>6.1 The field team are able to collect 50 biopsy samples during the boat surveys.</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	<p>the sex, mitochondrial DNA diversity and individual identity using microsatellite loci.</p> <p>6.3 Following project completion (and/or complete analysis of samples, whichever is first) genetic data available open access via a platform such as Genbank (DNA sequence data) or Datadryad (microsatellite genotype data).</p>	<p>6.2 Receipts from BAS of analysis costs; results presented in the final Technical Report.</p> <p>6.3 Receipts of submission into the genetic data platform.</p>	<p>6.2 Samples are exported to BAS in adequate time for analysis.</p>
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>Output 1. Increased awareness of the project</p> <p>1.1. The Project Officer (PO) will liaise with the FC Communications and Marketing Officer (CMO) regarding the content and timing of FC and local media outputs to maximise opportunities for raising awareness of the project.</p> <p>1.2. Lists of stakeholders and steering group members will be compiled to whom project updates should be disseminated, and communications maintained with the school and radio station to determine the best opportunities for visits.</p> <p>1.3. A specific project social media page will be established at the beginning of the project, and regular updates provided to promote the project.</p> <p>1.4. Liaise with Ted Cheeseman and the portal HappyWhale.com to ensure that sei whale images are uploaded annually and associated news updates disseminated via social media and other outlets such as IAATO newsletters.</p> <p>1.5. Liaise with project partners regarding the planning and production of potential scientific submissions to journals.</p> <p>1.6. Produce a Technical Report together with relevant project partners and upload to an online server from which it will be downloadable open access to the public. Final Technical Report should include species distribution maps, discussion of foraging ecology, genetic analysis, and photo-identification. Report disseminated to decision-makers and stakeholders.</p> <p>Output 2. Increased local capacity for whale research</p> <p>2.1. The PO and other FC staff will advertise whale volunteer opportunities in local media, and will vet applicants to ensure that they know what to expect, are physically fit and will cope with a long and physical day at sea. Ensure volunteer forms are completed for insurance purposes.</p> <p>2.2. Risk assessments will be produced to ensure the well-being of volunteer participants on the project boat surveys.</p> <p>2.3. The PO will coordinate with the volunteers around short notice weather windows to try and ensure equal opportunities for people to attend boat surveys. Basic instruction will be provided to the volunteers on field techniques, including photo-identification and faecal sampling (as opportunities arise).</p> <p>2.4. Training material, data forms and a data guidance protocol will be produced, and a full volunteer training day comprising a classroom session and fieldtrip will be planned, advertised and implemented.</p> <p>2.5. Full inventories of field equipment will be conducted at the end of each field season, and new equipment ordered as needed so that capacity is maintained.</p>			

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<p>Output 3. KBA Assessment</p> <p>3.1. A series of small boat surveys will be planned and executed in the two focal sites by the PO, coordinated around weather, and logistical constraints including boat availability (with project partner SMSG). Appropriate field methods will be developed to address the aims of the project.</p> <p>3.2. Data from field surveys will be entered into systematic and purpose-developed databases and maintained weekly during the field season. Development of species-specific photo-identification catalogues, and establishment of associated databases. Data analysis included QGIS mapping, recaptures of individuals, and habitat modelling to be conducted to support the KBA process.</p> <p>3.3. Available data sources on whales within the Falklands (those from the Darwin project, and others where available) will be compiled and assessed in support of a KBA application. A KBA application Technical Report will be produced to describe available data against KBA criteria, and circulated to decision-makers, stakeholders and the IUCN KBA partnership.</p> <p>3.4. Communications will be established and maintained with relevant international KBA personnel, to guide the process and ensure any application is optimal.</p> <p>Output 4. Acoustic monitoring</p> <p>4.1. FC and the acoustic project partner Sal Cerchio will coordinate to ascertain the equipment, methods, sites, and deployment plan that will optimise the acoustic component of the project. Ongoing communications will be maintained over the project lifetime as the acoustic work evolves.</p> <p>4.2. The PO and other FC staff will liaise with SMSG to organise boat charters during suitable weather windows to recover and re-deploy the acoustic devices at changeovers. Suitable risk assessment for acoustic deployment work developed.</p> <p>4.3. A method of transferring sound files to Sal Cerchio for analysis will be identified.</p> <p>4.4. Sal Cerchio will conduct an assessment of the suitability of automated classification detectors to identify the calls of baleen whales, especially sei whales, within the sound files.</p> <p>4.5. Acoustic results and interpretation (including conservation/management implications) will be reported to FC for inclusion in the project Technical Report.</p> <p>Output 5. Foraging ecology assessment</p> <p>5.1. Appropriate permits acquired from Falkland Islands Government for the tagging work.</p> <p>5.2. FC and project partner Ari Friedlaender will coordinate to ensure that suitably experienced tagging personnel and equipment are available in the Falkland Islands for the tagging component.</p> <p>5.3. PO will ensure that suitable sterilised faecal sampling equipment is available on small boat surveys, and will oversee and coordinate efforts to collect faecal material when opportunities arise. Processing and storage of faecal samples at a suitable facility in the Falkland Islands.</p> <p>5.4. Appropriate permits (FIG export permits) will be acquired to ship samples to BAS. Coordination between the PO and BAS personnel to arrange the transfer and shipment of samples.</p>			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>5.5. Analyses of prey species identification and tissue stable isotope analysis conducted by BAS, with results and interpretation (including conservation/management implications) reported to FC for inclusion in the project Technical Report.</p>			
<p>Output 6. Genetic analysis</p>			
<p>6.1. Permit acquired from Falkland Islands Government to sample dead whales and to conduct the biopsy sampling work; the latter requiring development of suitable protocols.</p>			
<p>6.2. Small boat surveys conducted at two focal sites to collect genetic material via live biopsy sampling using a crossbow. PO to conduct continuous routine maintenance to biopsy equipment throughout the field seasons to ensure a high level of sterilisation.</p>			
<p>6.3. Processing and storage of tissue samples at a suitable facility in the Falkland Islands.</p>			
<p>6.4. CITES export and import permits acquired through liaison with Mike Dunn (BAS) and FIG Customs, to ensure whale samples can be shipped to BAS for analysis. Communications maintained with BAS regarding shipment opportunities to the UK on their vessels, and subsequent transfer of samples undertaken.</p>			
<p>6.5. Genetic analyses conducted by BAS, with results and interpretation (including conservation/management implications) reported to FC for inclusion in the project Technical Report.</p>			

Additional Annexes (see separate documents)

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.	
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.	
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. However, we would expect that most material will now be electronic.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	